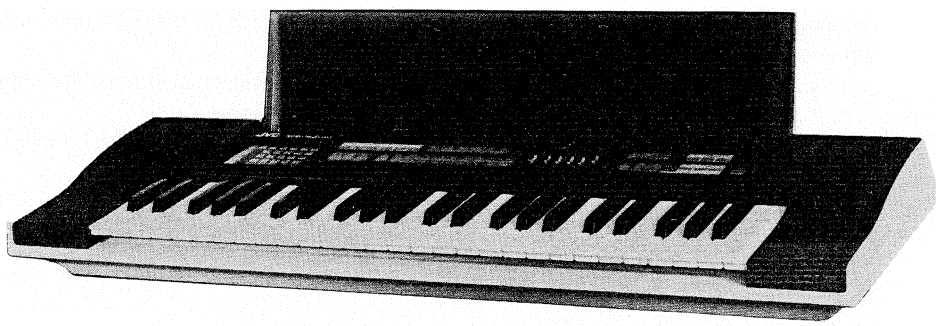
JVC

SERVICE MANUAL

ELECTRONIC KEYBOARD

MODEL KB-600 B/N/H



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No. 6518
Oct. 1984

Safetey Precaution

1. Make sure to use the specified parts for those marked with ⚠ symbol.
2. Return the clamp near the power supply to original position after servicing.
3. Disconnect the power before removing connectors of various units and circuit boards.
4. IMPORTANT: (Model KB-600B only)
   The wires in the mains lead (power cord) are coloured in accordance with the following code:
   Green-and-Yellow : Earth
   Blue : Neutral
   Brown : Live

   The wire which is coloured Green-and Yellow must be connected to the treminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
   The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured blue or black.
   The wire which is coloured Brown must be connected to the treminal which is marked with the letter L or coloured brown or red.

Features

- Variegated auto-accompaniment system by adopting the multi-functional microcomputer system
- Compucorder having sequence function memorizes chords of 48 + 48 + 32 bars
- Sequencer memorizing the melody of a music
- Composer (KE-10) performing and memorizing auto-accompaniment (arpegio, accomp., bass and custom rhythm)
- Key split switches for free setting of a range of accompanying keys
- Key transpose for easy transposing in a range of an octave
- Stereo auto-rhythm by PCM system
- Manual drum for optionally sounding percussions
- Custom memory for one-touch calling of preset, effect, fascinating chord
- Orchestral split to apply sounds by orchestral preset for accompaniment
- MIDI IN/OUT terminal to connect an external keyboard instrument or a personal computer
- Guitar strum terminal (option) for remote control of accompaniment

Specifications

Item	Description
Sound source	One master sound source Full melody mode : 8-note polyphonic Key split mode : 4-note polyphonic
Keyboard	49 keys (C2 ~ C6, 4 octaves)
	Mode / Accompaniment / Melody
	Initial state (Power ON): Left 19 / Right 30
	Normal, Orchestral split - OFF: 0 / 49
	Normal, Orchestral split - ON: Left 19 / Right 30
	Manual drums: Left 26 / Right 23
	Key split: Left 1~49 / Right 49~0
Custom memory	2 presets The following can be memorized: • Orchestral preset • Effect • Fascinating chord (except key transposing)
Orchestral preset	Organ, Jazz organ, Jazz flute, Clarinet, Piano, Vibraphone — Melody sound at initial state ↕ The both are reversible by Accomp. Select SW. String ensemble, Brass ensemble, Harpsichord, Vocal ensemble — Manual accomp. sound at initial state
Effect	Ultra-chord Ensemble/Tremolo Sustain
Auto-rhythm	14 patterns x 4 variations Waltz, Polka/March, Samba, Latin, Bossanova, Tango, Disco, Rock'n roll, Rock 1, Rock 2, Reggae, Slow rock, Swing, Shaffle rock Hand crap/Tambourine ON/OFF switch Rhythm tempo : ♩ = 50 ~ 280 Synchro-start Start & Stop Intro. & Fill-in Tact ... Beat conductor (4 LEDs)
Manual drum	High Tam-tam (HT) Middle Tam-tam (MT) Large Tam-tam (LT) Small Conga (SC) Large Conga (LC) Tambourine (TB) Hand crap (HC) Symbal (CY) Cow-bell (CB) Closed High-hat 1 (CHH 1) Closed High-hat 2 (CHH 2) Open High-hat (OHH) Cabasa (CA) Snear drum (SD) Rim shot (RS) Bass drum (BD) Cabasa (CA) with Accent & Rest

Item	Description
Fascinating chord	Mode: One-finger/Multi-finder Chord memory: Accomp. ... 43 patterns Arpegio ..... 10 patterns Bass ..... 51 patterns Key split Key transpose: C#~F# → Up G ~ B → Down
Compu-corder	Chord record Sequence record: Memorizing of arpegio, accomp., bass, auto-rhythm and fill-in patterns available Memorizing capacity: 48 bars x 2 musics 32 bars x 1 music] with Tuning function
Sequencer	Melody composing: 1 music (300 notes) Solo, Orch.: No function Arpegio: 1, 2, 3, 4-ch Accomp.: 1, 2, 3, 4-ch Bass: 1, 2, 3, 4-ch Rhythm: 1, 2, 3, 4-ch Intro./Fill-in: 1, 2, 3, 4-ch
Other controls	Power switch Master volume control Orchestra volume control Accomp./Arpegio/Bass/Rhythm volume control Mic. volume control Main pitch control
External terminals	Headphone AUX IN R/L AUX OUT R/L EXP. Pedal MIC IN MIDI IN/OUT Guitar Strum
Power. output	2.5W×2
Power source	AC 240/220/120V, 50/60 Hz
Power consumption	34 W (Power SW ON) 3.6 W (Power SW OFF)
Speakers	12 cm x 2
Finish	Two-tone colored plastic case (Black & White)
Dimensions	860 mm(W) x 93 mm(H) x 291 mm(D)
Weight	6.8 kg

Main Parts Location

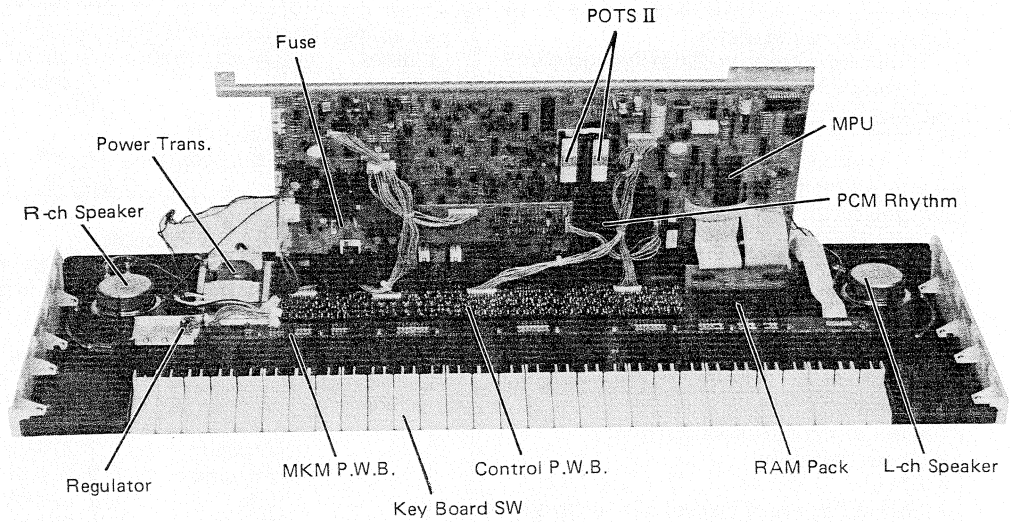


Fig. 1

Disassembly

1. **Removal of manual keys**
   1) Remove eight screws fastening the key chassis to remove the chassis.
   2) Removal of keys
      Holding the point C depressed pull a key in the direction of D.
      When removing a black key, first remove two white keys next to it and then remove the black key in the same manner as removing a white key.
   3) Fitting of keys
      Taking care about setting a coil spring on the projection of the key chassis, press the point E and insert the key into a square hole F.

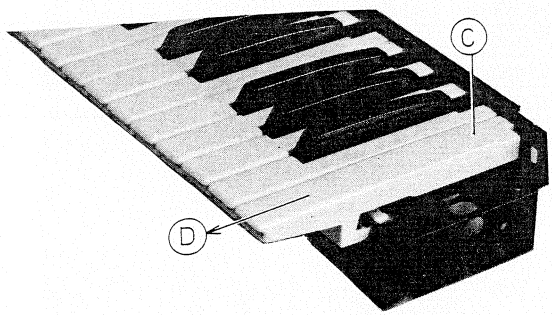


Fig. 2

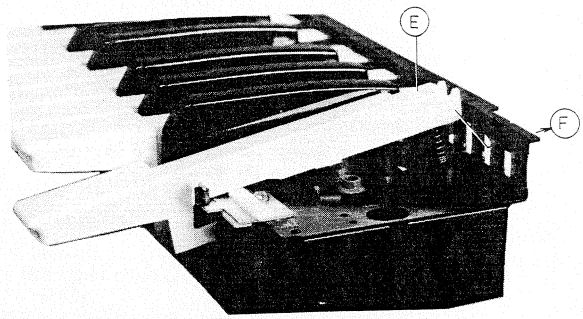


Fig. 3

2. **Removal of the music stand (smoked cover)**
   Remove the inside screws (see Fig. 4), and push the cover holder with a screwdriver and the like in the direction of the arrow mark to remove it. (Do removal only at a side.) After that, stand the cover and it will be removed easily.

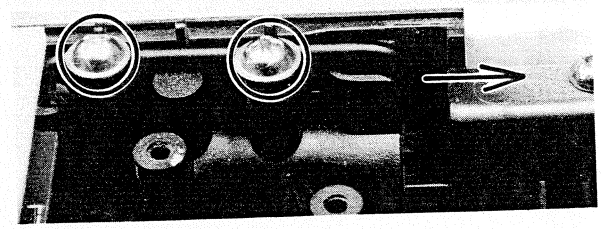


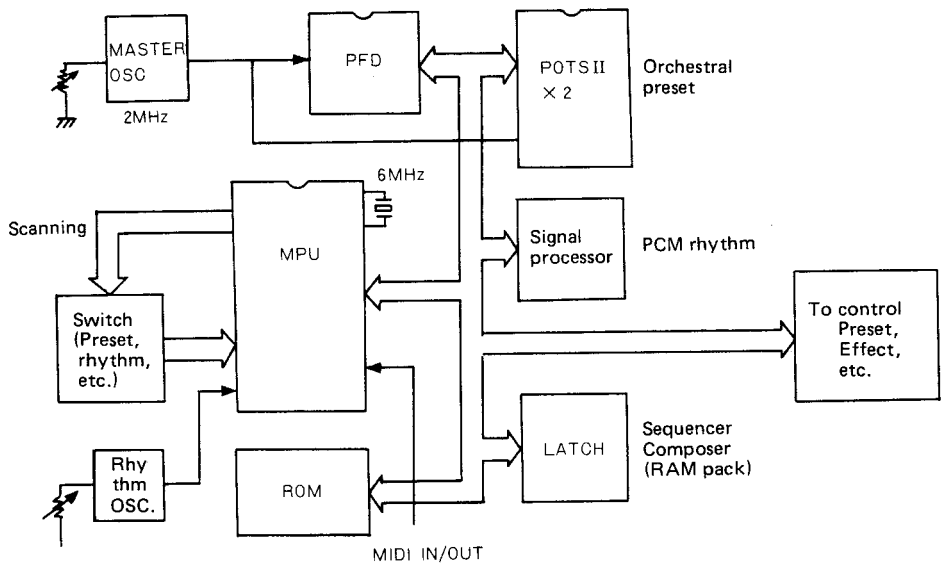
Fig. 4

Outline of Microcomputers

1. Controlling Functions of the Microcomputer

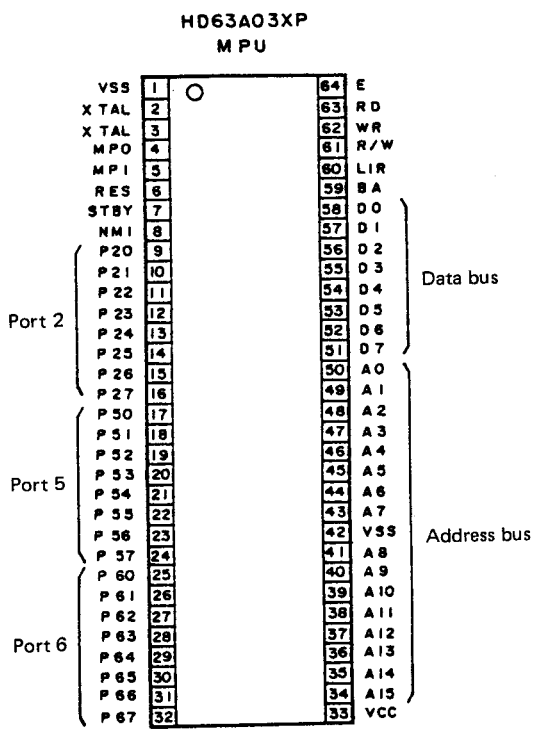
- Orchestral keying (incl. frequency (sound source) dividing)
- Auto-rhythm
- Turning on/off of Tempo LED and Switch LED
- Custom memory
- Ultra-chord
- Orchestral split
- Input and output of MIDI
- Fascinating chord
- Compucorder
- Sequencer
- Composer
- Key transpose
- Key split
- Selection of preset, effect, etc.

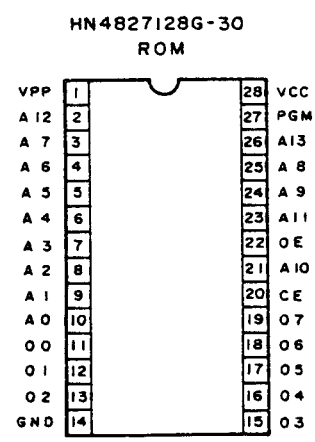
2. System Block Diagram



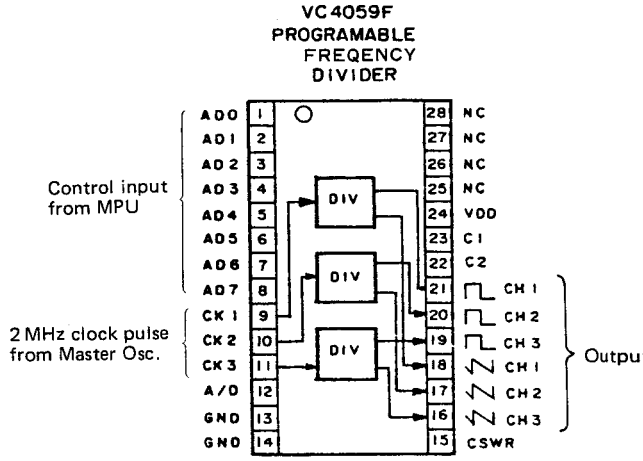
3. MPU & ROM

All controls of MPU are operated according to signals from the built-in ROM and an external ROM (HN4827128G-30).

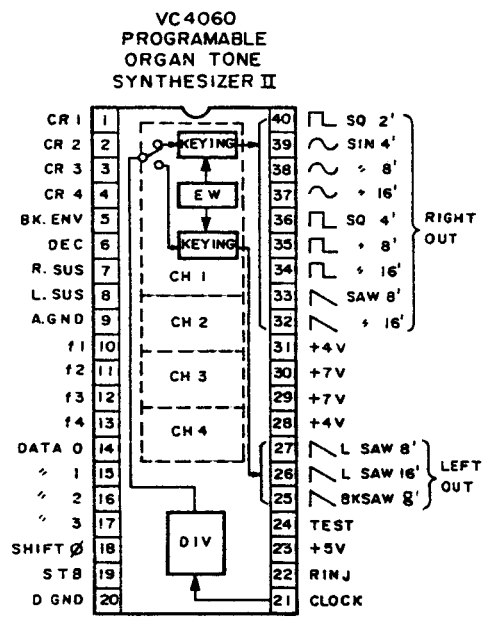




4. PFD (Programmable Frequency Divider)

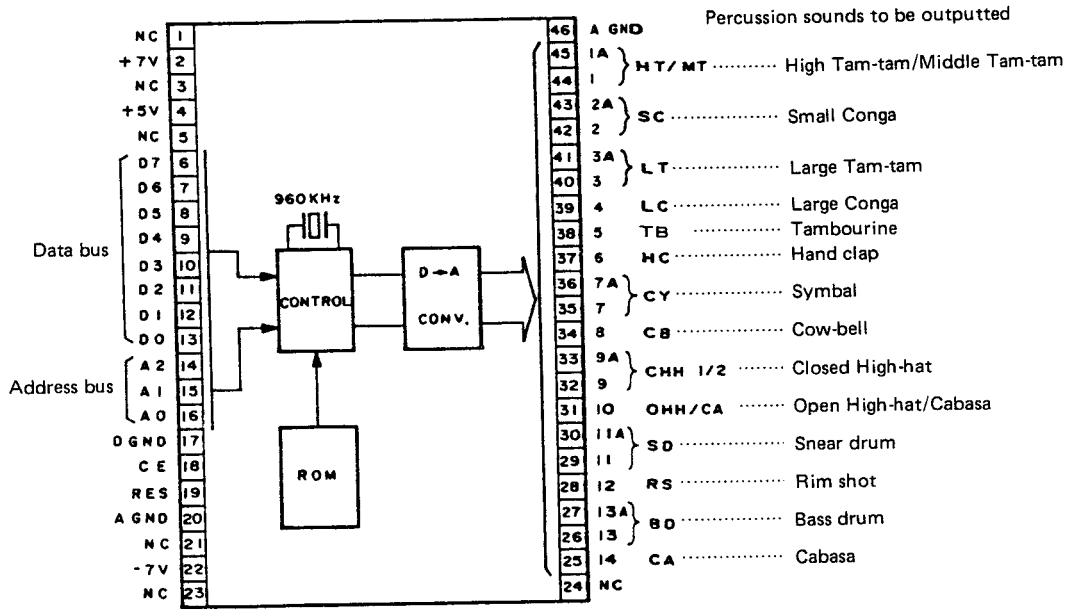


5. POTS II (New Programmable Organ Tone Synthesizer)



6. Signal Processor (VC4061)

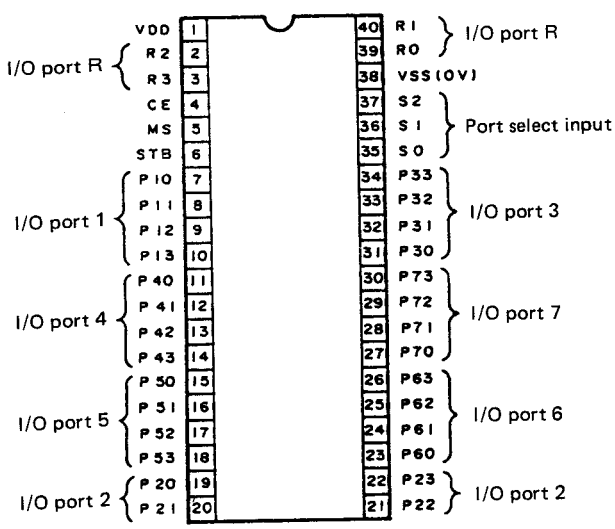
The ROM inside this IC has memorized percussion sounds of PCM and it produces various kinds of rhythms according to the data signals programmed by the microcomputer.



Notes:
- Regarding two terminals having the same number, one with the symbol A is for the rhythm output with attack.
- Terminals to be used in common is switched at use.
- Cabasa is outputted from two terminals of 25 and 31.

7. I/O Expander (M50782SP)

This supplies data signals coming from the microcomputer to the Effect circuit and the Signal switching circuit.

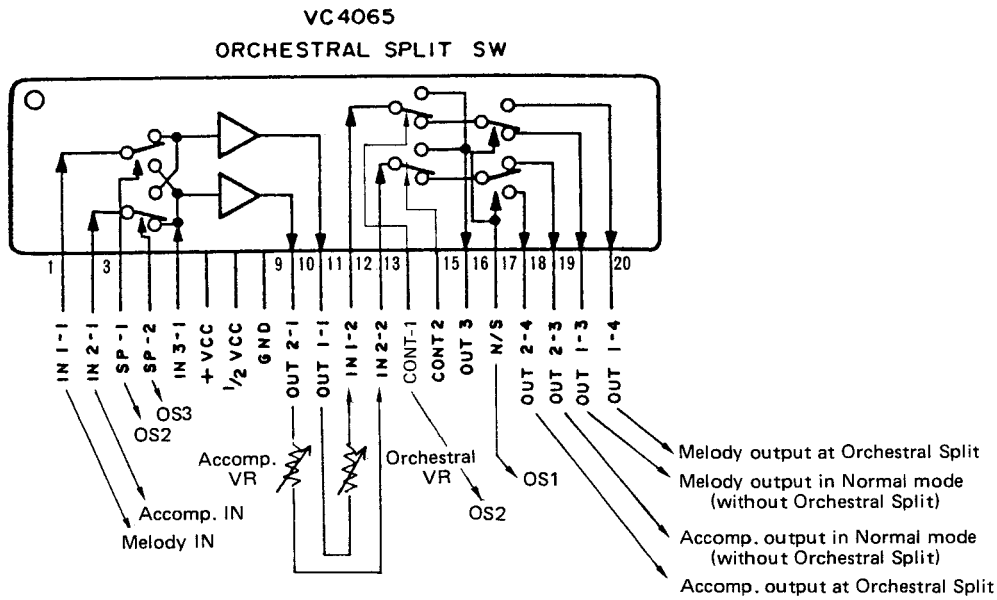


Output terminals

7. Brass ensemble ON
8. Vocal ensemble ON
9. Harpsichord ON
10. String ensemble ON
11. Accomp. sustain MAX.
12. Melody sustain MAX.
13. Jazz flute ON
14. Organ ON
15. Jazz organ ON
16. Piano ON
17. Vibraphone ON
18. Clarinet ON
19. OS2
20. OS3
21. OS1
22. Decay control
23. Upper multi. key pulse
24. Melody key pulse
25. Accomp. pulse
26. Brass key pulse
27. NC
28. Chorus ON
29. Ensemble ON
30. Tremolo ON
31. Accomp. key pulse (Backing)
32. Guitar/Cut guitar Select
33. Cut guitar
34. Vibrato ON

■ Orchestral Preset

This functions to apply orchestral preset sounds not only for melody but also for accompaniment. For, the keyboard is split by the KEY SPLIT and the left side can be used for accomp. sound and the right side for melody even in the mode that a fascinating chord is not used.
Sound volume of accompaniment is controlled by the accomp. volume and melody's volume by the orchestra volume.



Mode		Control terminals OS1	OS2	OS3	Preset sounds
Split - OFF (Normal)		H	H	H	All the orchestral presets function for melody.
Split - ON	Accomp. select (Leftward)	L	H	L	Presets of String ensemble, Brass ensemble, Harpsichord ensemble and vocal ensemble (left side by Key Split) are used for producing accomp. sounds.
	Accomp. select (Rightward)	L	L	H	Presets of Organ, Jazz organ, Jazz flute, Clarinet, Piano and Vibraphone (left side by Key Split) are for producing accomp. sounds.

Adjustment

No.	Item	Measuring device	Adjusting point	Measuring point	Conditions	Adjusting Method
1	Master oscillator frequency	Frequency counter	TO P.W.B. L2 coil	TO P.W.B. J171	Preset: Organ Pitch volume: Center	Holding A5 key pressed, adjust the coil L2 so that the frequency becomes 3,536 Hz.
2	BBD bias	By ear	TO P.W.B. R58 (20 KB)	—	Preset: Organ Orchestra VR: Max.	Turn R58 counterclockwise and clockwise to confirm the clipping positions. Holding C3 chord pressed, adjust R58 to set it at the center position of the right and left clippings.
3	VCF (1)	Oscillo-scope	TO P.W.B. R125 (200 K)	TO P.W.B. AUX OUT	Preset: Vocal ensemble C6 key: ON	Make a short-circuit between J313 and J312 first. Holding C6 key pressed, adjust R125 to to obtain the maximum sine-wave.
4	VCF (2)	Oscillo-scope	TO P.W.B. R82	TO P.W.B. R27 (IC side) AUX OUT	Preset: Clarinet C6 key: ON	Make a short-circuit between J313 and J312 first. Holding C6 key pressed, adjust R82 to obtain the maximum sine-wave.

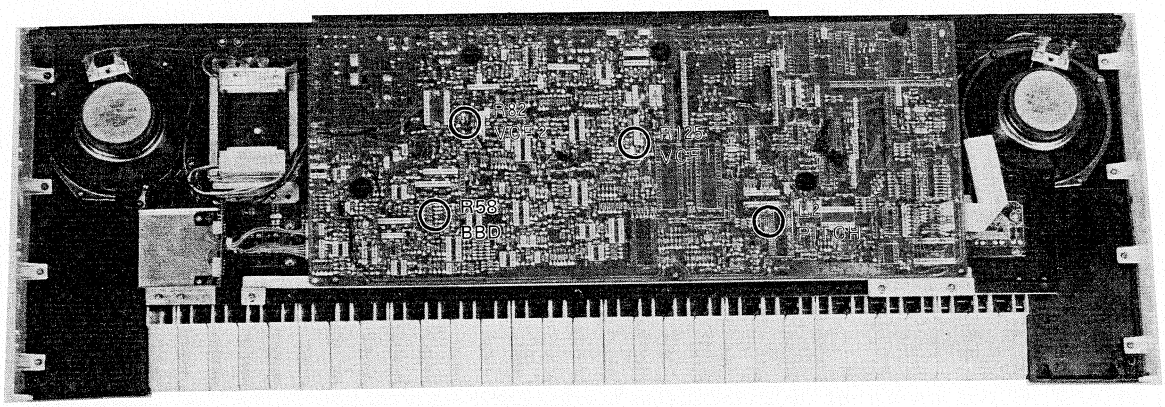
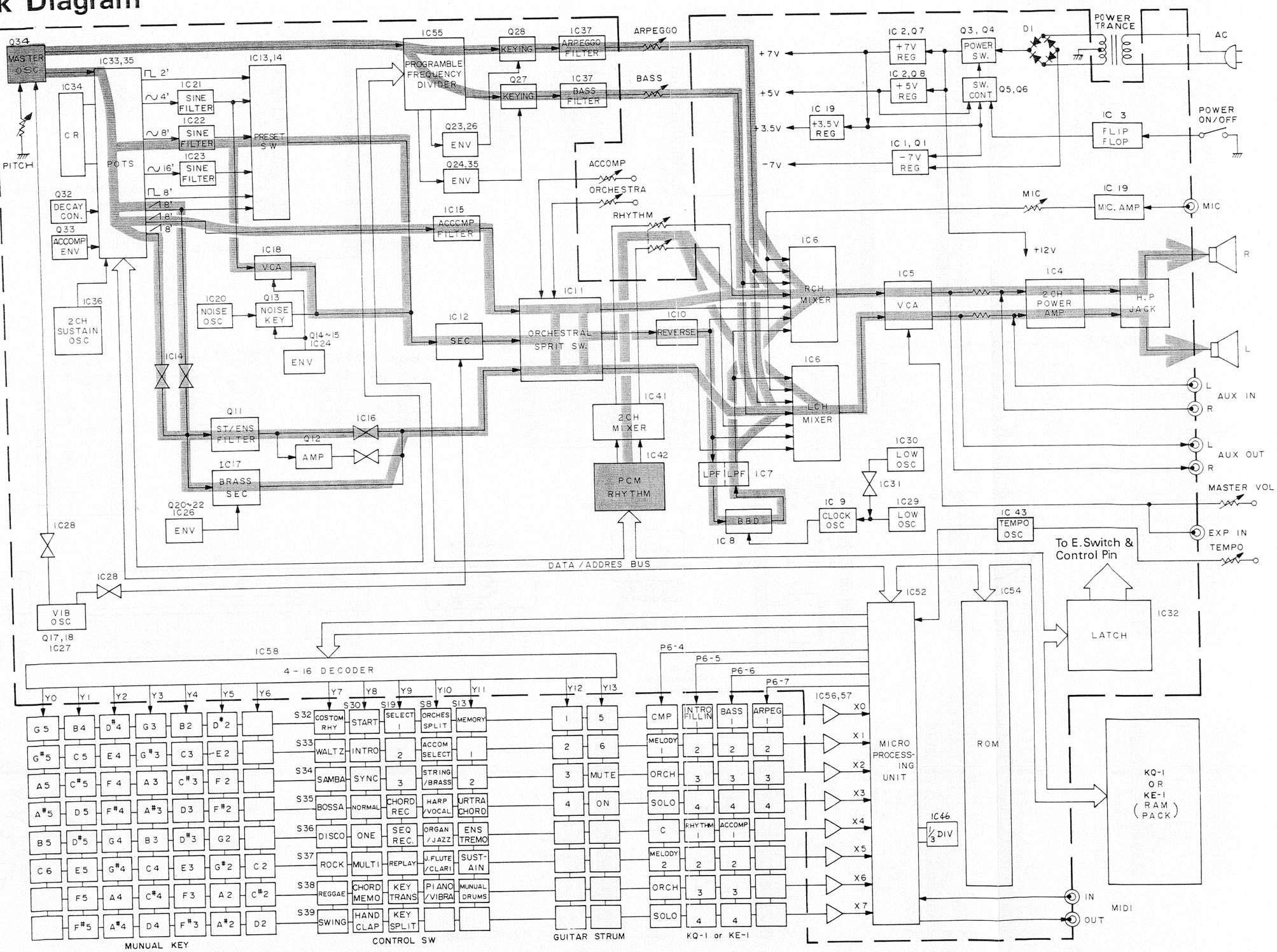


Fig. 5

Preset Chart

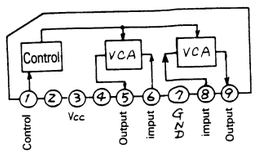
Preset	Sound Source							Envelope		Effect		
	2′ ∿	4′ ∿	8′ ∿	16′ ∿	8′ ⊓	8′ ◿	Noise	Slow attack	Per-cussive	Delay vibrato	Repeat	Others
Piano						○			○			VCF
Vibraphone	○	○		○					○	○	○	VCF
Jazz flute		○	○				○	○		○	○	Attack
Clarinet					○			○		○		VCF
Organ		○	○	○								Chorus/Tremolo
Jazz organ		○	○	○			○					Attack/Key click
Harpsichord						○			○			
Vocal ensemble						○		○		○		Ensemble
String ensemble						○		○		○		Ensemble
Brass ensemble						○				○		VCF

Block Diagram

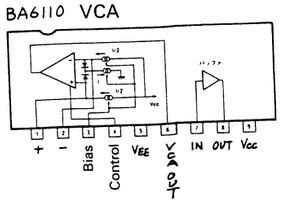


IC Block Diagram

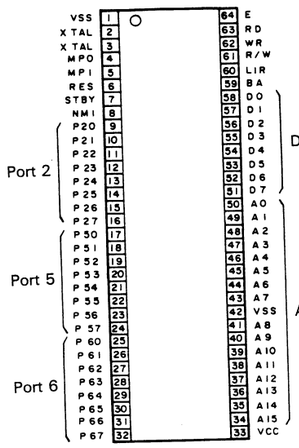
AN5733 VCA



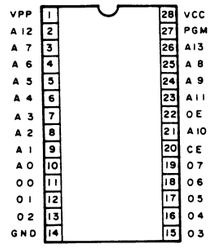
BA6110 VCA



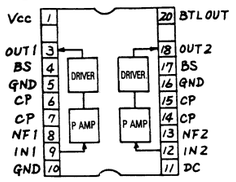
HD63A03XP
MPU



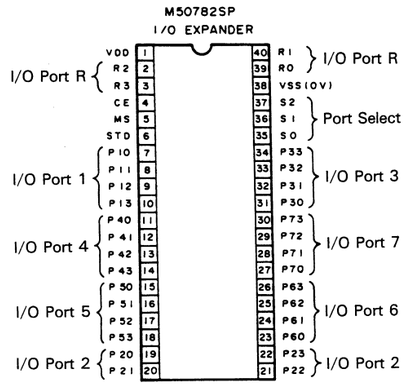
HN4827128G-30
ROM



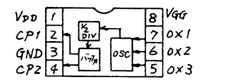
LA4125T POWER AMP



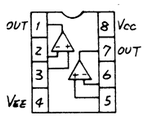
M50782SP
I/O EXPANDER



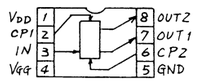
MN3102 BBD CLOCK OSC



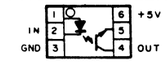
TL082CP
NJM4558D
NJM4558DD
OP.AMP



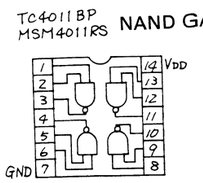
MN3204 BBD 512 Stage



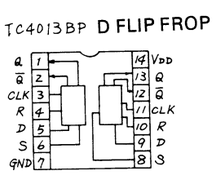
PC 900
PHOTO COUPLER



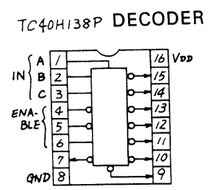
TC4011BP
MSM4011RS NAND GATE



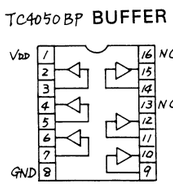
TC4013BP D FLIP FROP



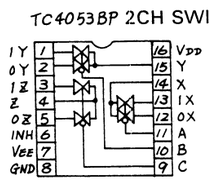
TC40H138P DECODER



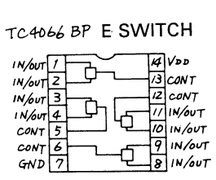
TC4050BP BUFFER



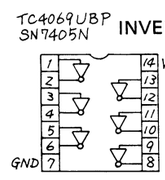
TC4053BP 2CH SWITCH



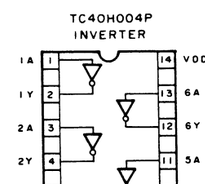
TC4066BP E SWITCH



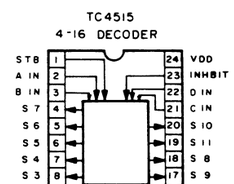
TC4069UBP
SN7405N INVERTER



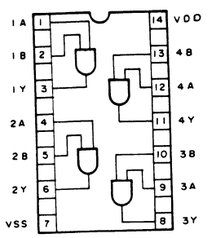
TC40H004P
INVERTER



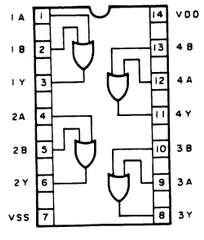
TC4515
4-16 DECODER



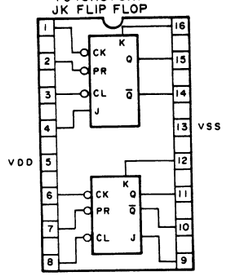
TC40H008P
AND GATE



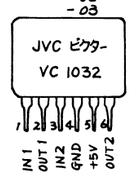
TC40H032P
OR GATE



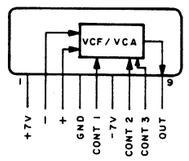
TC40H076AP
JK FLIP FLOP



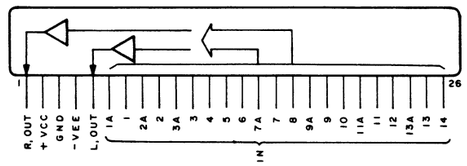
VC1032-01 -02 -03 FILTER



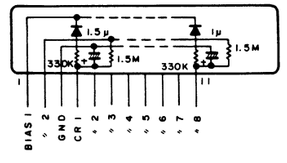
VC1036
SOUND EFECT CONTROL



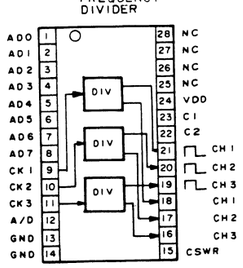
VC1038
MIXEAR



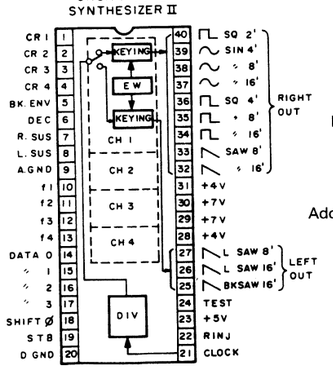
VC1039
CR ARRAY



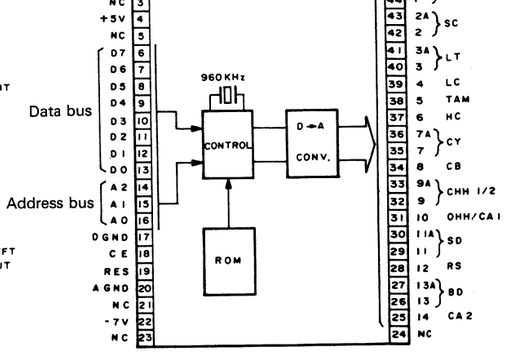
VC4059F
PROGRAMABLE FREQUENCY DIVIDER



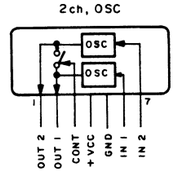
VC4060
PROGRAMABLE ORGAN TONE SYNTHESIZER II



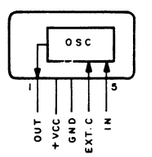
VC4061
PCM RHYTHM



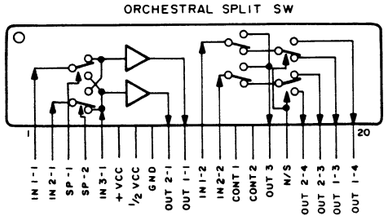
VC4062
2ch, OSC



VC4064
TEMPO, OSC



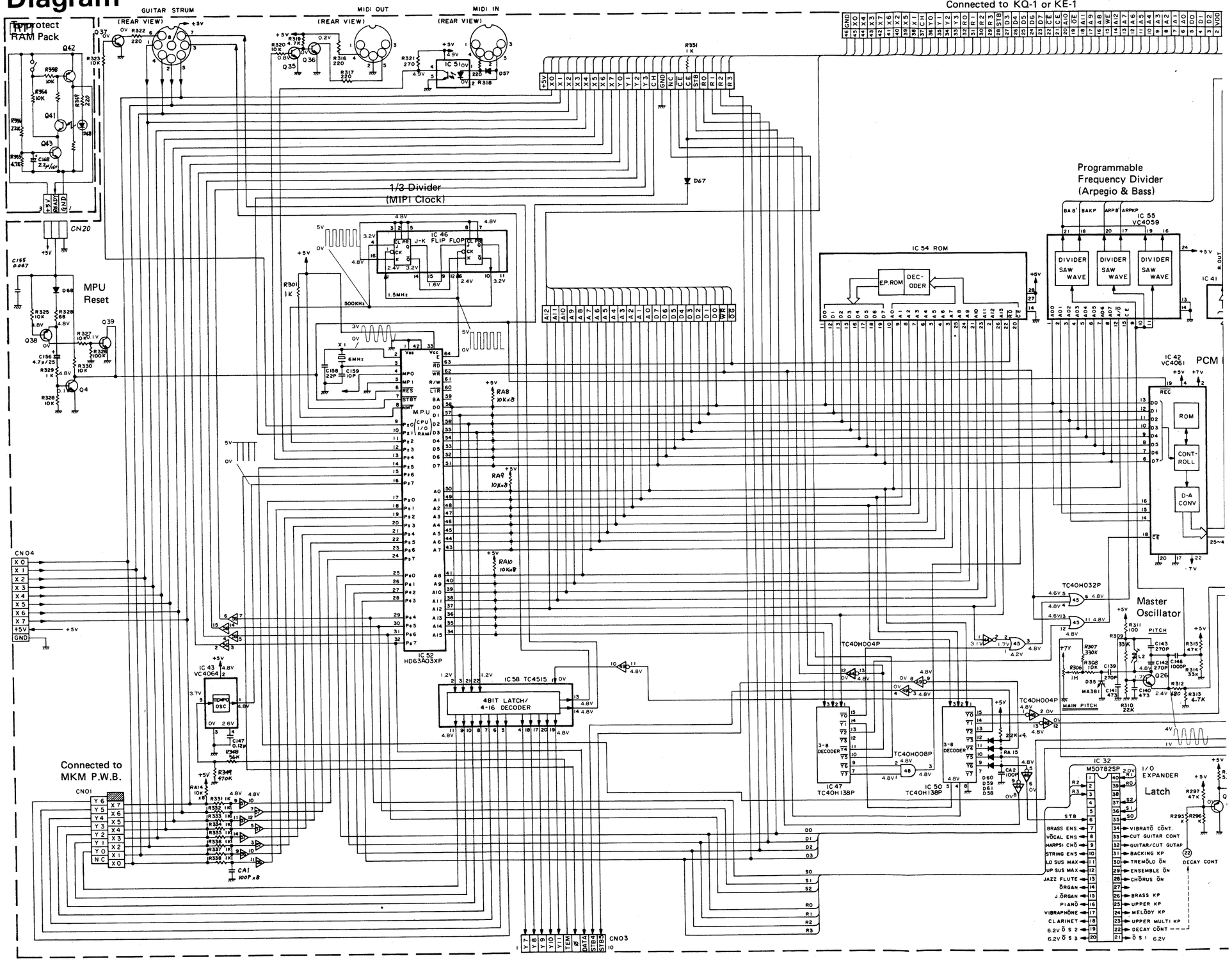
VC4065
ORCHESTRAL SPLIT SW



TO PCB Schematic Diagram

Semiconductor

Symbol No.	Parts No.
IC5	AN5733
IC18	BA6110
IC52	*HD63A03XP
IC54	*HN4827128G-30
IC4	LA4125T
IC32	*M50782SP
IC9	MN3102
IC8	MN3204
IC1, 2, 6, 10, 15, 19, 27, 29, 30, 37	NJM4558DD
IC51	*PC900
IC44, 49	TC40H004P
IC48	*TC40H008P
IC45	*TC40H032P
IC46	*TC40H076
IC47, 50	TC40H138P
IC24, 25, 26	TC4011BP
IC3	TC4013BP
IC56, 57	TC4050BP
IC13, 14, 16, 28, 31	TC4066BP
IC20	TC4069UBP
IC58	TC4515BP
IC21	VC1032-01
IC22	VC1032-02
IC23	VC1032-03
IC7	VC1032-01
IC12, 17	VC1036-01
IC41	*VC1038-02
IC34	*VC1039-01
IC55	*VC4059
IC33, 35	*VC4060
IC36	*VC4062-01
IC43	*VC4064-01
IC11	*VC4065-01
IC42	*VC4061
Q19	2SK163(M.N)
Q2	2SA684(R)
Q13, 20, 22, 32, 38	2SA929(F)
Q1, 3	2SB943(P, Q)
Q	2SC1570NP(F)
Q7, 8	2SD1268(P, Q)
D55	MA381(S)
D	1S1555
D1	DBA40C-K15
D8, 9	GZA3, 3(Y)
D12	GZA6, 2(Y)
D2, 6, 13	GZA8, 2(Y)



KE-1

Programmable Frequency Divider (Arpegio & Bass)

IC 55 VC4059

DIVIDER SAW WAVE

IC 41 2-ch Mixer VC1038 MIXER

IC 42 VC4061 PCM Rhythm

REC ROM CONT-ROLL D-A CONV

IC 32 M50782SP I/O EXPANDER Latch

Master Oscillator

TC40H032P

Sine Filter

Accomp. Envelope

IC 21 IC 22 IC 23 VC1032-03 VC1032-02 VC1032-01 FILTER

Programmable Organ-tone Synthesizer

IC 33 VC4060 IC 34 VC1039 CR ARRAY

IC 35 VC4060

Preset SW

IC 13 VIBRA PHONE ORGAN J. ORGAN JAZZ FLUTE

IC 14 CLARINET PIANO

IC 12 SOUND EFECT CONTROL VC1036 VCF/VCA

Attack VCA

IC 18 BA6110 VCA

IC 20 TC4069UBP

White Noise

Accomp. Guitar Filter

IC 16

Strings Ensemble Filter

Brass Filter

IC 17 VC1036

Sustain Oscillator

IC 36 VC4062

Envelope

Vibrato Oscillator

Mic. Amp.

Orchestral Split

IC 11 VC4065

Stereo/Ensemble/Tremolo

IC 7 VC1032- FILTER

IC 8 MN3204 BBD

IC 9 MN3102 BBD CLOCK

Mixer

VCA (Electronic Volume)

IC 5 AN5733

Arpegio

Bass

Envelope

Low Frequency Oscillator

IC 31

Power Amp.

IC 4 LA4125T

Regulator

Power SW Flip-flop

IC 3 TC4013BP

Power Sw

AC STANDBY

POWER ON/OFF

MASTER VOL

AUX IN

AUX OUT

HEAD PHONE

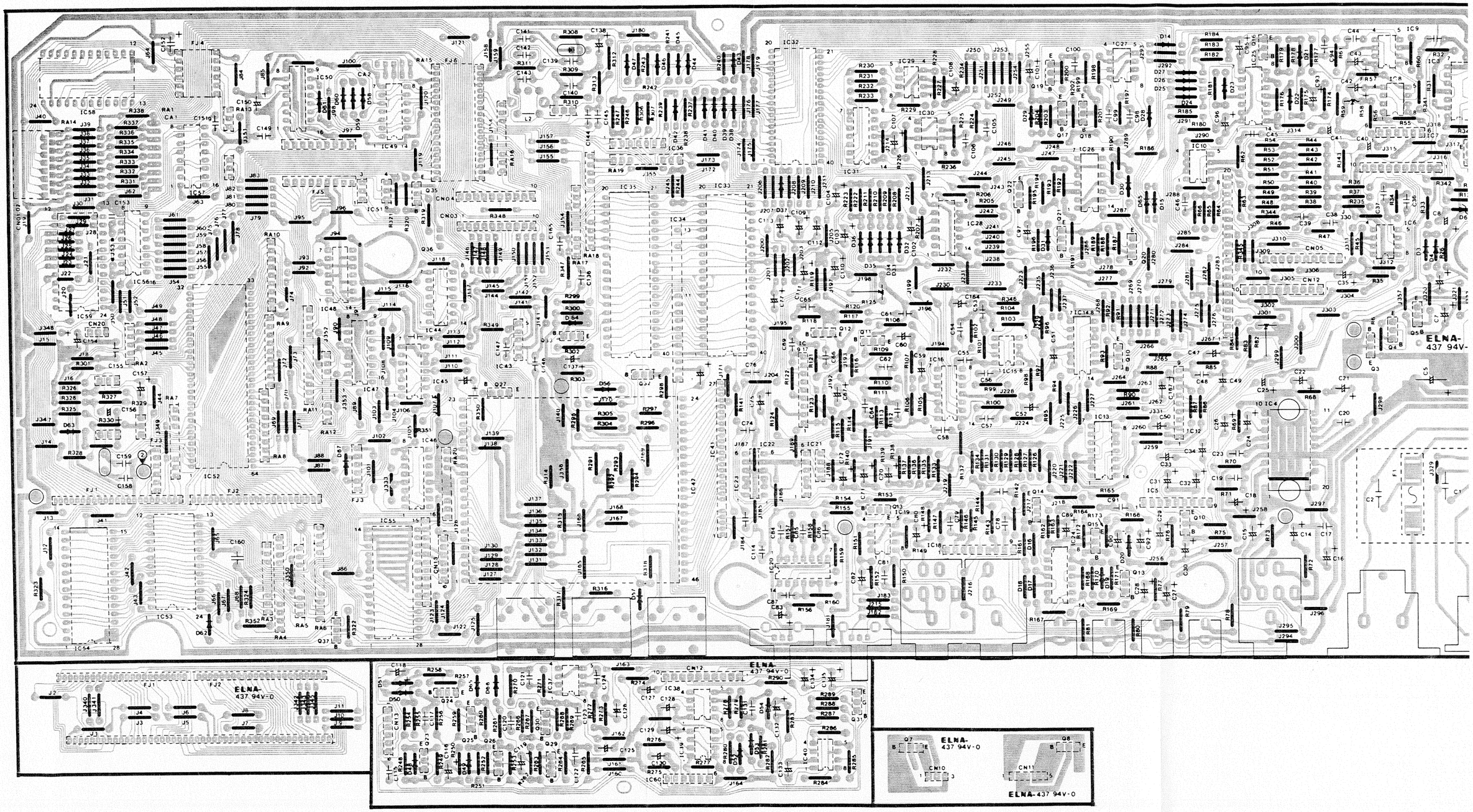
V. SELECTOR

AC INPUT

TO

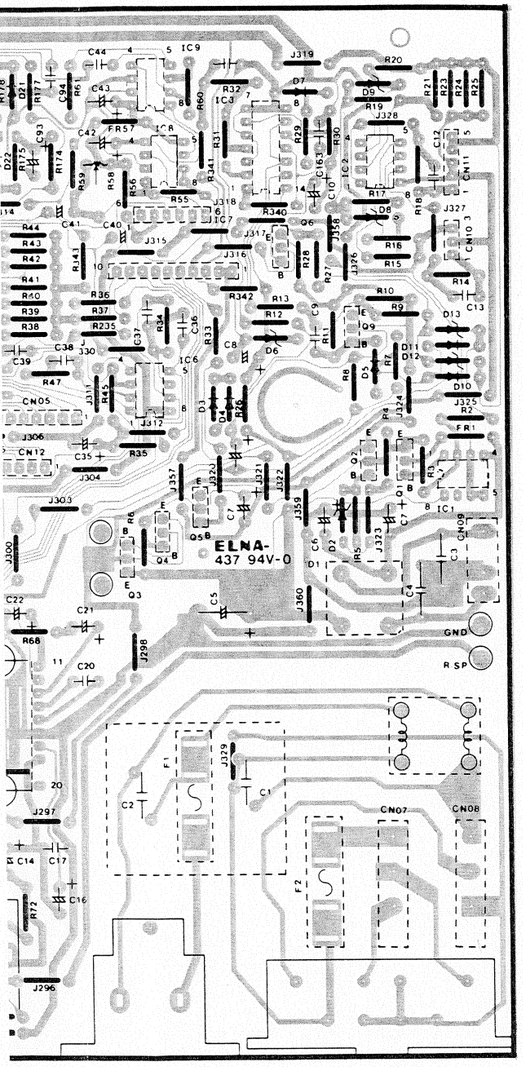
(No. 6518) 13

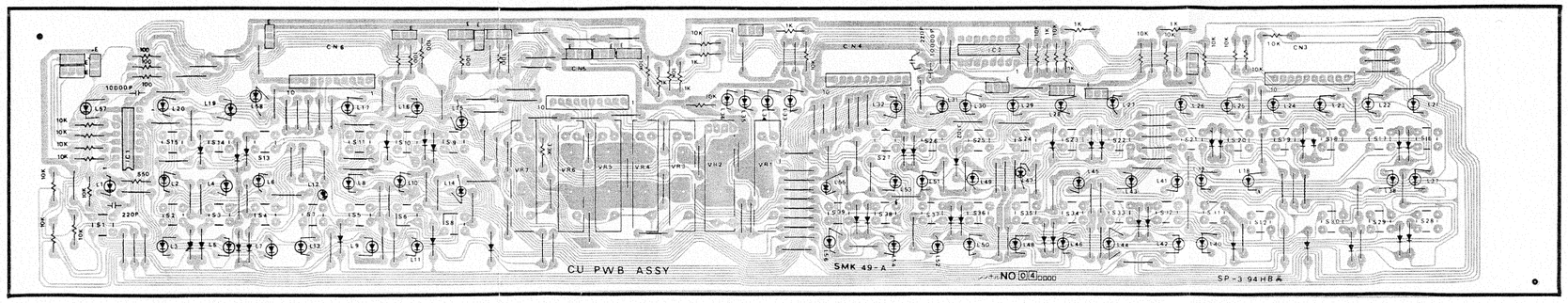
TO PCB Pattern Diagram



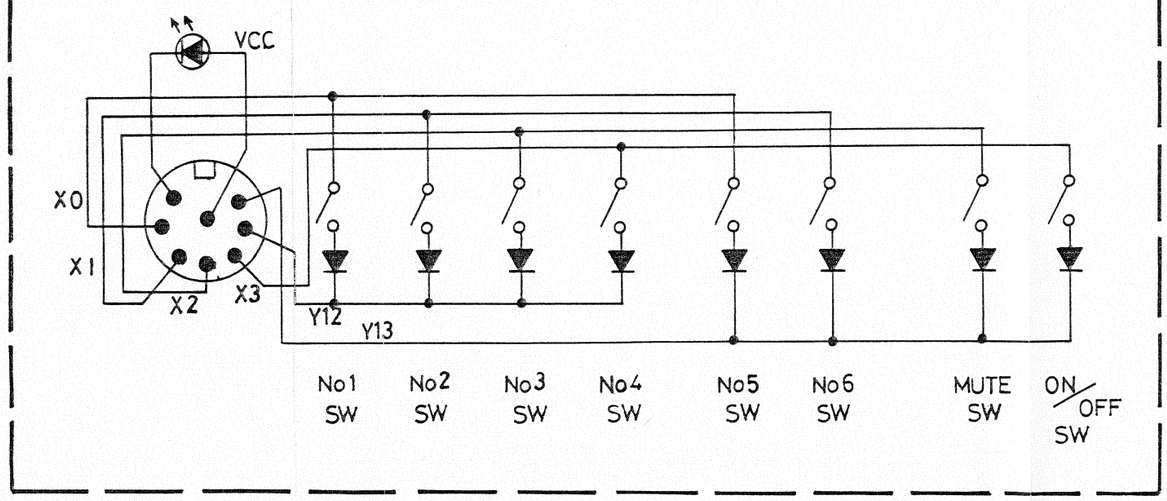
KB-300 B/N/H	KB-300 B/N/H

CU PCB Pattern Diagram

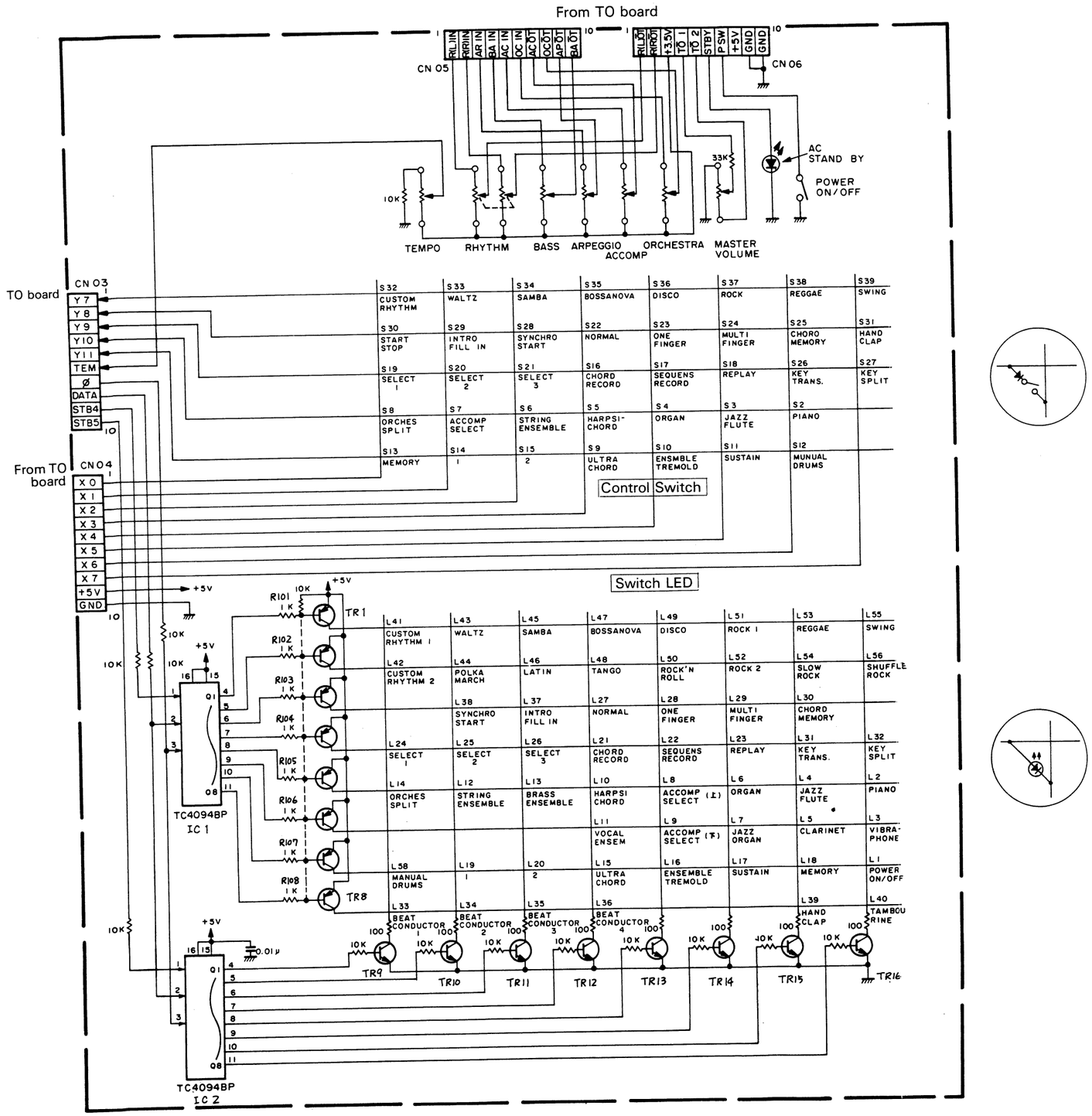




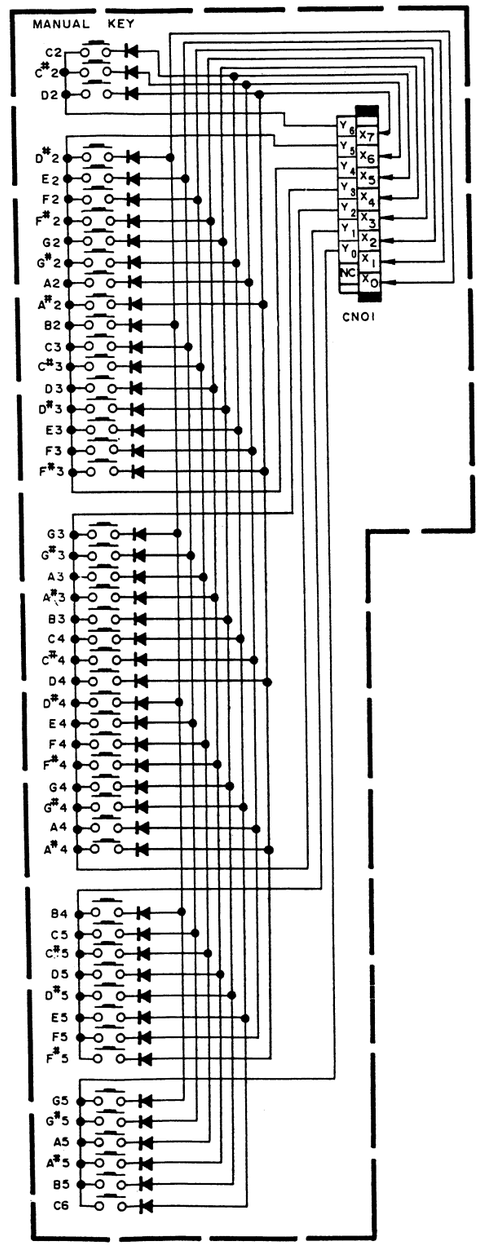
KG-10 Guitar Strum board Schematic Diagram



CU PCB Schematic Diagram (Control Unit)



MKM PCB Schematic Diagram



Rhythm Pattern Charts

Rhythm Name	Variations	Instrumentation	Deseription
WALTZ	1	OHH CHH1 SD BD HC TB	
	2	OHH CHH1 SD BD HC TB	
	3	CHH1 SD BD HC TB	
	4	CHH1 CY SD BD HC TB	2bars
POLKA MARCH	1	SD BD HC TB	2bars
	2	CY OHH SD BD HC TB	2bars
	3	OHH CHH1 SD BD HC TB	
	4	OHH CHH1 SD BD HC TB	
SAMBA	1	CHH1 BD SC LC HC TB	
	2	CHH1 SD BD LT HC TB	
	3	OHH CHH1 SD BD LT SC LC HC TB	
	4	CHH1 CB BD SC LC CA HC TB	Salsa
LATIN	1	CHH1 BD SC LC CB CA HC TB	2bars
	2	OHH CHH1 BD SC LC HC TB	Beguin
	3	OHH CHH1 BD SC LC CB CA HC TB	Cha-Cha
	4	OHH CHH1 SD BD SC LC CB CA HC TB	LatinRock
BOSSANOVA	1	CHH1 RS BD HC TB	2bars
	2	CHH1 OHH RS BD HC TB	2bars
	3	OHH CHH1 RS BD HC TB	2bars
	4	CHH1 CY SD BD HC TB	2bars
TANGO	1	OHH SD BD HC TB	
	2	OHH SD BD HC TB	
	3	SD BD HC TB	
	4	SD BD HC TB	
DISCO	1	OHH CHH2 SD BD HC TB	
	2	OHH SD BD HC TB	
	3	CHH SD BD HC TB	
	4	CHH SD BD HC TB	
ROCK'N ROLL	1	CHH1 SD BD HC TB	
	2	CHH1 SD BD HC TB	
	3	CHH1 SD BD HC TB	
	4	CHH1 SD BD HC TB	
ROCK1	1	CHH1 SD BD HC TB	
	2	CHH1 SD BD HC TB	
	3	CHH1 SD BD HC TB	
	4	CHH1 SD BD HC TB	
ROCK 2	1	CHH1 SD BD OHH HC TB	
	2	OHH CHH1 SD BD HC TB	
	3	OHH CHH1 SD BD HC TB	
	4	OHH CHH1 SD BD HC TB	
REGGAE	1	OHH CHH1 RS BD HC TB	2bars
	2	CHH1 CB SD BD HC TB	2bars
	3	CHH1 RS CA BD SC LC HC TB	2bars
	4	OHH CHH1 RS CA BD HC TB	
SLOW ROCK	1	CHH1 RS BD HC TB	
	2	CHH1 RS BD HC TB	
	3	CHH1 SD BD OHH HC TB	
	4	OHH CHH1 SD BD HC TB	

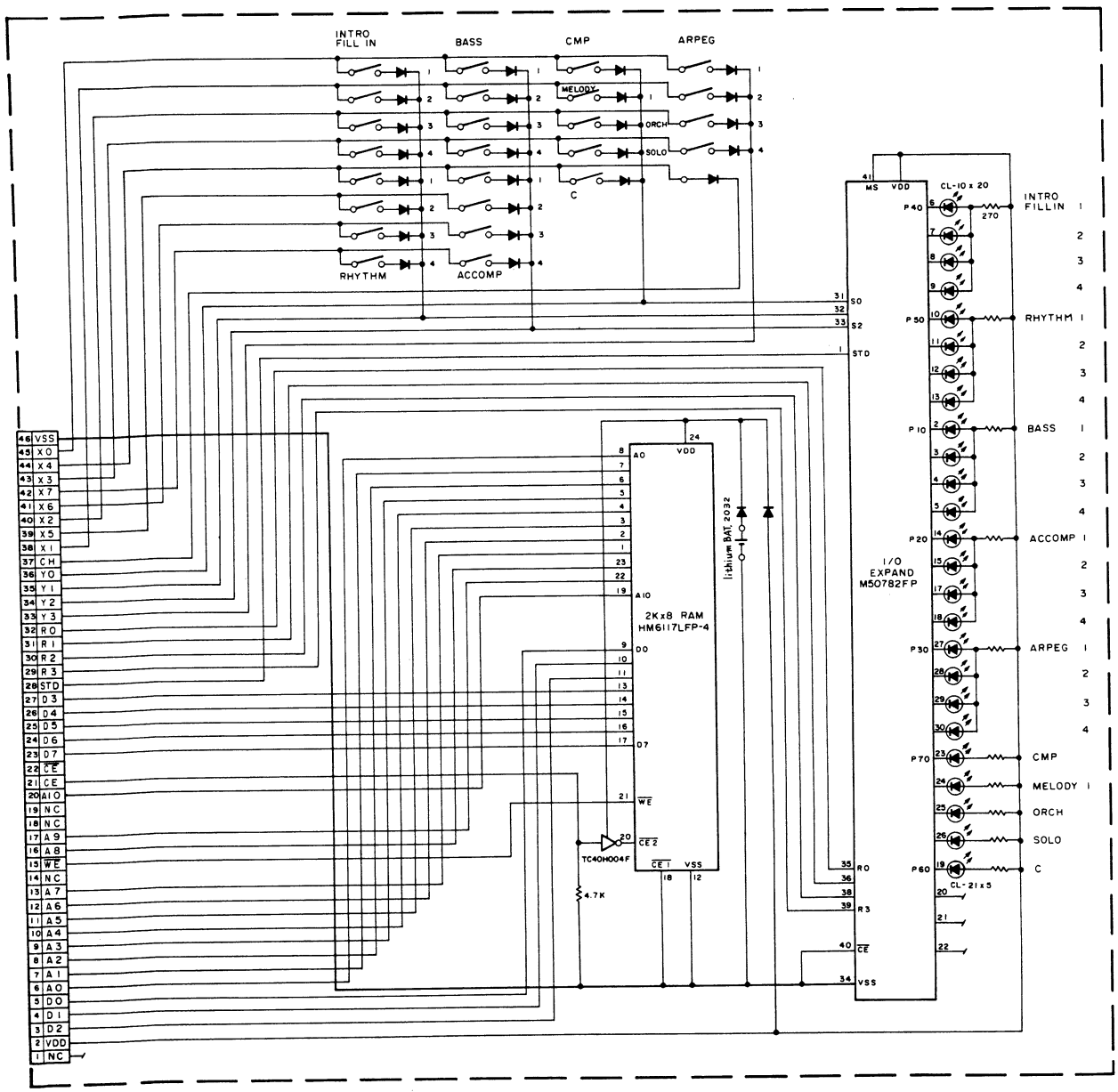
Rhythm Name	Variations	Instrumentation	Deseription
SWING	1	CHH2 CY SD BD HC	
	2	CHH2 CY RS BD HC	
	3	CHH2 CY BD HC	
	4	CHH2 CY SD BD HC	
SHUFFLE ROCK	1	CHH1 SD BD HC TB	
	2	CHH1 SD BD HC TB	
	3	OHH CHH1 SD BD HC TB	
	4	OHH CHH1 SD BD HC TB	

Intro/Fill-in

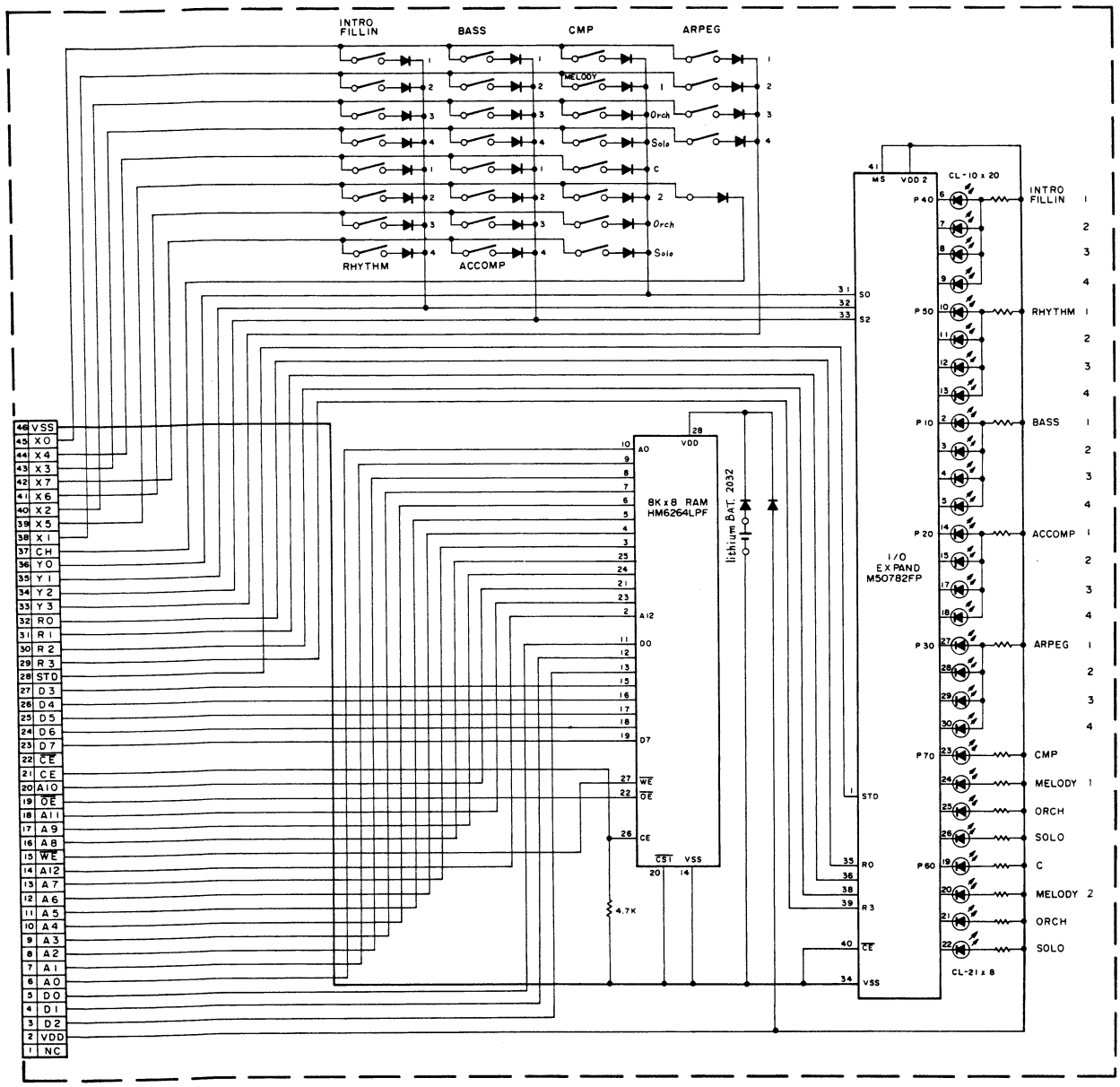
Rhythm Name	Intro/Fill-in	Instrumentation	Description
DISCO	1	OHH MT LT HT BD	
	2	OHH HT MT LT BD SD	
	3	OHH CHH1 HT LT SD BD	
	4	HT LT SD BD	
SHUFFLE	1	OHH CHH2 HT MT LT SD BD	
SLOW ROCK	2	CY HT LT SD BD	
	3	OHH CHH2 HT MT SD BD	
SWING	4	HT MT LT BD	
WALTZ	1	OHH CHH2 MT LT SD BD	
	2	CY HT LT SD BD	
	3	OHH CHH2 HT SD BD	
	4	HT MT LT BD	
ROCK2	1	OHH MT LT HT BD	
SAMBA	2	CHH1 HT LT SD BD	
	3	OHH CHH1 HT LT SD BD	
	4	HT LT SD BD	
ROCK'N ROLL	1	CY CHH1 HT LT SD BD	
	2	OHH HT MT LT BD SD	
ROCK1	3	OHH CHH1 HT LT SD BD	
	4	HT LT SD BD	
POLKA/MARCH	1	OHH CY SD BD	
	2	SD BD	
	3	OHH SD BD	
	4	OHH SY SD BD	
REGGAE	1	OHH HT LT RS BD	
	2	HT LT RS BD	
	3	OHH CHH1 RS	
	4	CY HT MT LT BD	
BOSSANOVA	1	OHH CHH1 HT LT BD	
LATIN	2	OHH CHH1 HT ML LT BD	
TANGO	3	OHH HT MT LT SD BD	
	4	CHH1 HT MT LT	

BD : Bass Drum
CA : Cabasa
CB : Cow-bell
CHH : Closed High-hat
CY : Symbal
HC : Hand Crap
HT : High Tam-tam
LC : Large Conga
LT : Large Tam-tam
MT : Middle Tam-tam
OHH : Open High-hat
RS : Rim Shot
SC : Small Conga
SD : Snear Drum
TB : Tambourine

KQ-10 Digital Sequencer Schematic Diagram



KE-10 Digital Composer Schematic Diagram



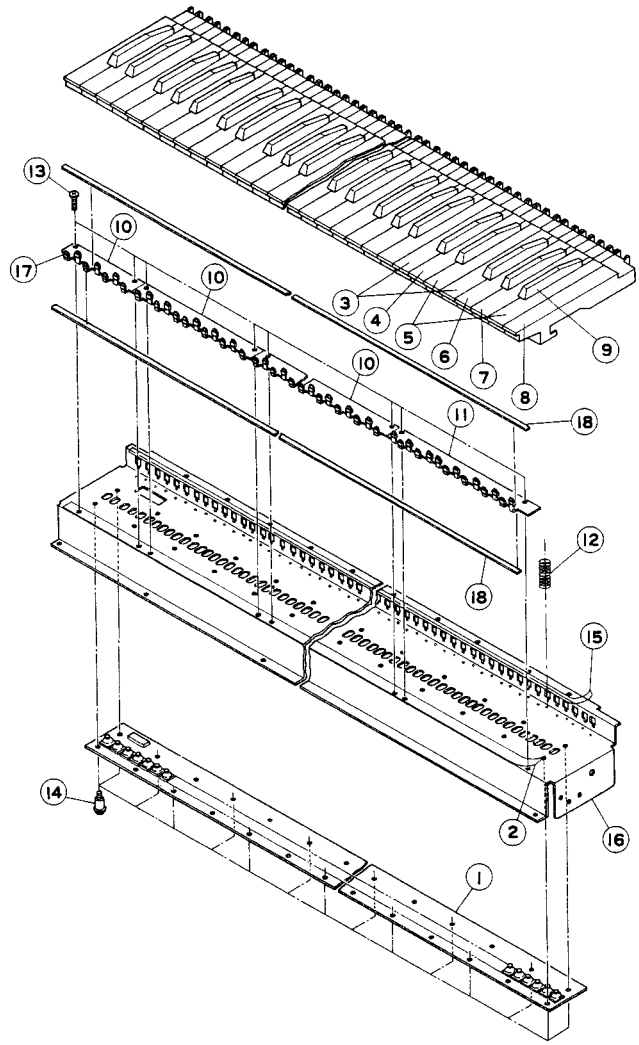
Parts List

■ PARTS LIST BY KIND

Kind	⚠	Parts No.	Parts Name	Description	Q'ty
P.W.B. Ass'y		SMK45-B	TO P.W.B. Ass'y		1
		SMK25	MKM P.W.B. Ass'y		1
		CU P.W.B. Ass'y	SMK49-B		1
		RT P.W.B. Ass'y	SMK45		1
Semi-conductor		AN5733	IC	VCA	1
		BA6110	"	OP. Amp.	1
		HD63A03XP	"	MPU	1
		HN4827128G-30	"	128 k-Bit ROM	1
		LA4125T	"	Power Amp.	1
		M50782SP	"	I/O Expander	1
		MN3102	"	Clock OSC.	1
		MN3204	"	512 Stage BBD	1
		MN4094	"	for Control Unit	2
		NJM4558DD	"	OP. Amp.	10
		PC900	"	Photo Coupler	1
		TC40H004P	"	Inverter	2
		TC40H008P	"	AND Gate	1
		TC40H032P	"	OR Gate	1
		TC40H076AP	"	JK Flip-flop	1
		TC40H138P	"	Decoder	2
		TC4011BP	"	NAND Gate	3
		TC4013BP	"	D. Flip-flop	1
		TC4050BP	"	Buffer	2
		TC4066BP	"	Analog Switch	5
		TC4069UBP	"	Inverter	1
		TC4515BP	"	Decoder	1
		VC1032-01	"	Filter	1
		VC1032-02	"	"	1
		VC1032-03	"	"	1
		VC1032-11	"	"	1
		VC1036-01	"	"	2
		VC1038-02	"	Mixer Amp.	1
		VC1039-01	"	CR Array	1
		VC4059	"	P. Frequency Divider	1
		VC4060	"	P.O.T.S. II	2
		VC4062-01	"	Sustain Control	1
		VC4064-01	"	OSC.	1
		VC4065-01	"	E. Switch	1
		VC4061	"	Signal Processor	1
		2SK163(M,N)	F.E.T.		1
		2SA684(R)	Transistor		1
		2SA929(F)	"		5
		2SA564	"	for Control Unit	9
		2SB943(P,Q)	"		2
		2SC1570NP(F)	"		29
		2SC1684	"	for Control Unit	8
		2SD1268(P,Q)	"		2
		2SC2021LN(R,S)	"		1
		2SA937LN(R,S)	"		1
		RPM-20PB	"	Photo Transistor	1
		SIM-20ST	LED		1
		SMV2220	"	for Control Unit	3
		SMV2221	"	"	55
		MA381(S)	Vari. Cap.		1
		1S1555	Diode		92
	⚠	DBA40C-K15	"		1
		GZA3.3(Y)	Zener Diode		2

Kind	⚠	Parts No.	Parts Name	Description	Q'ty
Coil		GZA6.2(Y)	"		1
		GZA8.2(Y)	"		3
		CSA6.00MT	Cera Lock		1
		SMV2110	OSC. Coil		1
	⚠	SMV2194-BS	Coil		1
Switch		SMV2164	Key Switch		49
		SMV2215	Switch		1
		SMV2217	"	for Control Unit	39
Jack	⚠	QMC0263-002-BS	AC Socket		1
		QMS6312-018	HP. Jack	for Headphone, Mic	2
		QMS6303-015	EXP. Jack	for Expression Pedal	1
		SMV2107-WHT	Pin Jack	for AUX L-ch	2
		SMV2107-RED	"	for AUX R-ch	2
		SMV2191	DIN Jack	for MIDI	2
		SMV2193	"	for Guitar Strum	1
Fuse	⚠	QMF51A2-R20-BS	Fuse	200 mA	1
	⚠	QMF51A2-R40-BS	"	400 mA	1
V. Resistor		SMV2189	V. Resistor	for Mic,	1
		SMV2216	"	for Pitch	1
		SMV2218	"	for Control Unit	1
		SMV2219	"	"	6
Transformer	⚠	SMV2176-BS	Power Trans.		1
Cord	⚠	QMP2550-200	Power Cord	for Model H	1
	⚠	QMP9017-013-BS	"	for Model B	1
	⚠	QMP3950-244	"	for Model N	1
Knob		SM3003-RED	Slide Knob	for Master VR	1
		SM3003-GRY	"		6

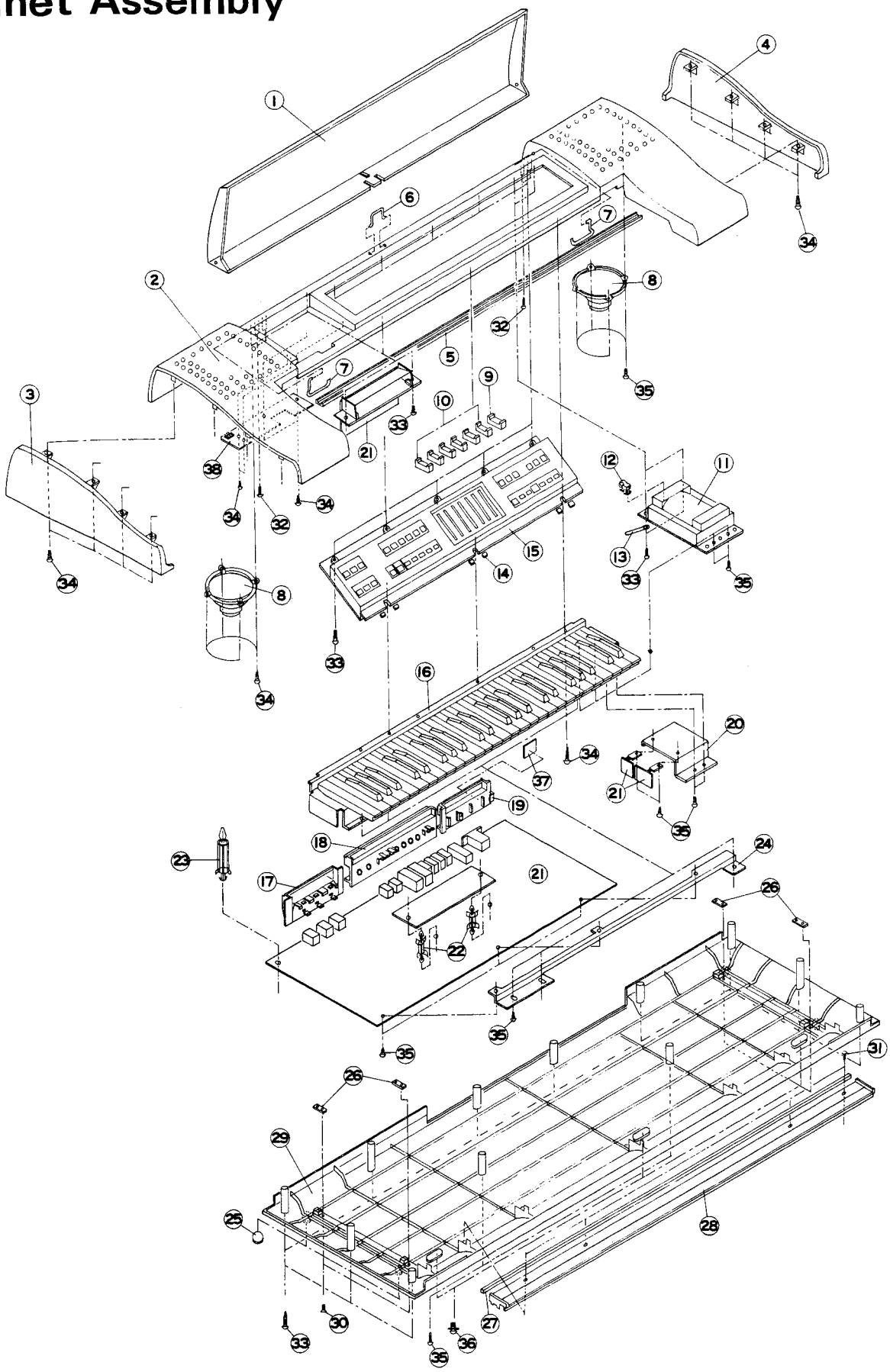
Manual Key Assembly



PARTS LIST

No.	⚠	Parts No.	Parts Name	Description	Q'ty
			MKM49 Ass'y		1
1		SMK25	MKM49 P.W.B. Ass'y		1
2		HRT010-999	Both-side Adhesive Tape		1
3		SM2732-0CF	White Key	C (do), F (fa)	8
4		SM2732-00D	"	D (re)	4
5		SM2732-0EB	"	E (mi), B (si)	8
6		SM2732-00G	"	G (so)	4
7		SM2732-00A	"	A (ra)	4
8		SM2732-0CC	"	Highest C (do)	1
9		SM3860-001	Black Key		20
10		SM3861-012	Key Guide		3
11		SM3861-013	"		1
12		SM40281	Spring		49
13		SBST3008Z	Tapping Screw		12
14		SM40296	Screw		26
15		SM40213-003	Tape		1
16		SM2733-049	MK Chassis		1
17		SM40205-002	Guide Gum		49
18		SM4990-067-EVS	Felt		2

Cabinet Assembly



PARTS LIST

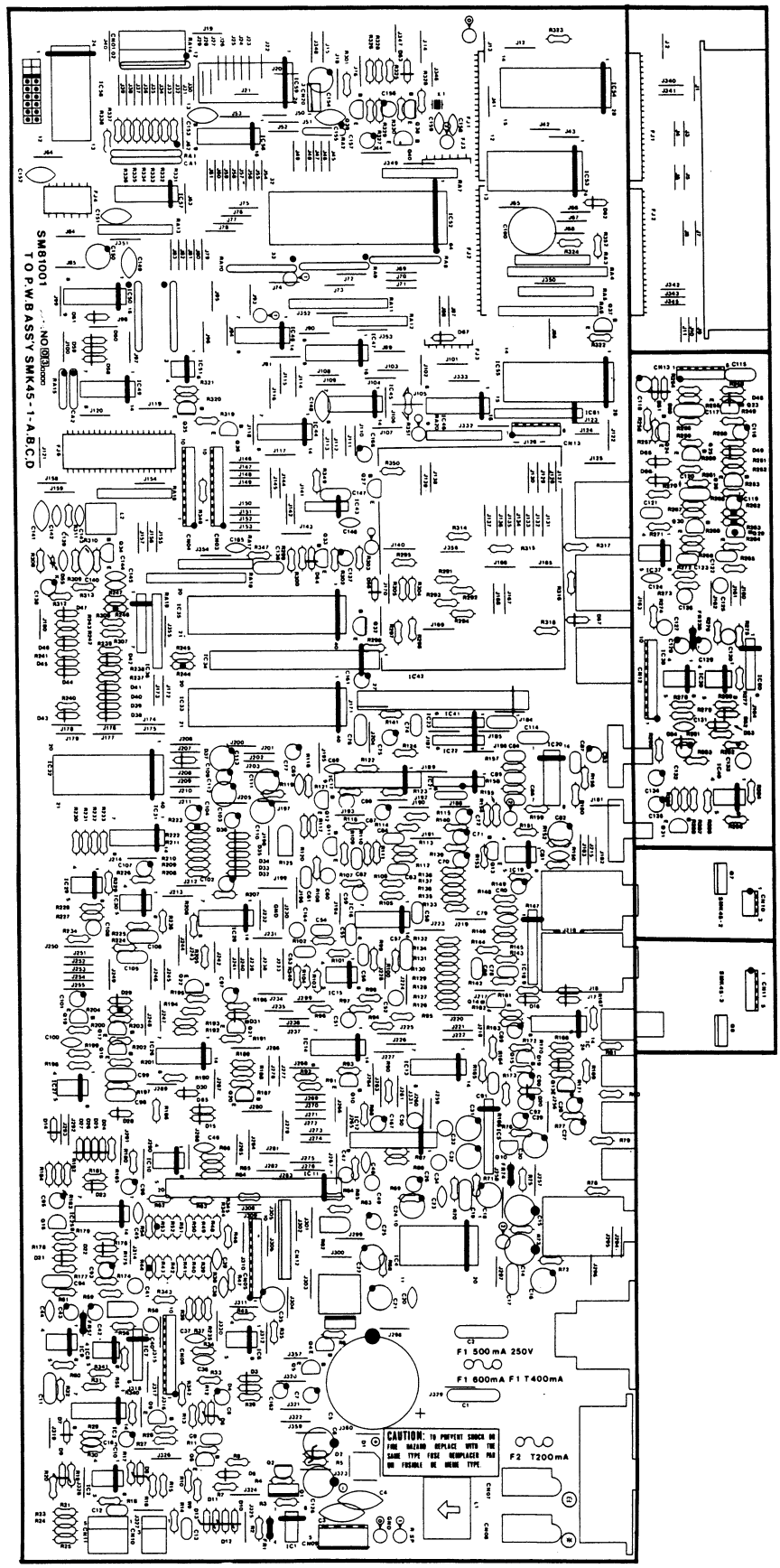
No.	⚠	Parts No.	Parts Name	Description	Q'ty
1		SM2801	Smoked Cover		1
2		SM1400-00B	Control Panel		1
3		SM2800-00L	Side Cover	┐	1
4		SM2800-00R	〃	├ Control Panel Ass'y SM1407-00D	1
5		SM30004	Fitting	┘	1
6		SM3933	Cover Holder		1
7		SM3932	〃		2
8		HSA1201-01B	Speaker		2
9		SM3003-RED	Slide Knob		1
10		SM3003-GRY	〃		6
11	⚠	SMV2176-BS	Power Transformer		1
12	⚠	SJ43055	Cord Band		1
13		SCV0518-004	Lag Plate		2
14		SM40471	Cushion		6
15		SMV2172	Control Unit		1
16		OLSM2084	MK-49 Ass'y		1
17		SM3996	External Plate	for MIDI	1
18		SM2802	〃	for AUX	1
19		SM3995-002	〃	for AC Input	1
20		SM30017	Heat Sink		1
21		SMK45-B	TO P.W.B. Ass'y		1
22		SM40463	P.W.B. Spacer		2
23		SM40458	Bushing		1
24		SM30012	P.W.B. Holder		1
25		SM40334-001	Foot Felt	┐	4
26		SM40333-002	Foot Bracket		4
27		SM4990-068-CYS	Felt		1
28		SM2743-004	Front Panel	├ Base Ass'y SM1408-00C	1
29		SM1401-001	Base		1
30		SSSP3006N	Screw	┘	4
31		SBSF3012Z	〃		4
32		GBSF3012Z	〃		4
33		SBSF3012M	〃		14
34		SBSF3008Z	〃		16
35		SBST3008Z	〃		14
36		DPSP4010Z	〃		3
38			RT P.W.B. Ass'y		1

CU P. C. Board Assembly (Control Unit)

PARTS LIST

Symbol No.	⚠	Parts No.	Parts Name	Description	Q'ty
		SMK49-B	CU P.W.B. Ass'y		1
		SM2115-A	Face Plate		1
IC1,2		MN4094B	IC		2
Q9~18		2SA564	Transistor		9
Q1~8		2SC1684	〃		8
D1~38		1S1555	Diode		38
L12~14,34~36,41		SMV2220	LED	Green	7
L1~11,15~33,37~58		SMV2221	〃	Red	51
S1~39		SMV2217	Switch		39
VR2		SMV2218	V. Resistor		1
VR1,3~7		SMV2219	〃		6

TO P. C. Board Assembly



PARTS LIST

Symbol No.	⚠	Parts No.	Parts Name	Description	Q'ty
		SMK45-B	TO P.W.B. Ass'y		1
		SM81001	TO P.W.B.		1
IC5		AN5733	IC	VCA	1
IC18		BA6110	"	OP. Amp.	1
IC52		HD63A03XP	"	MPU	1
IC54		HN4827128G-30	"	128 K ROM	1
IC4		LA4125T	"	Power Amp.	1
IC32		M50782SP	"	I/O Expander	1
IC9		MN3102	"	Clock OSC.	1
IC8		MN3204	"	BBD 512-stage	1
IC1,2,6,10,15,19,27,29,30,37		NJM4558DD	"	OP. Amp.	10
IC51		PC900	"	Photo Coupler	1
IC44, 49		TC40H004P	"	Inverter	2
IC48		TC40H008P	"	AND Gate	1
IC45		TC40H032P	"	OR Gate	1
IC46		TC40H076AP	"	JK Flip-flop	1
IC47, 50		TC40H138P	"	Decoder	2
IC24, 25, 26		TC4011BP	"	NAND Gate	3
IC3		TC4013BP	"	D. Flip-flop	1
IC56, 57		TC4050BP	"	Buffer	2
IC13, 14, 16, 28, 31		TC4066BP	"	Analog Switch	5
IC20		TC4069UBP	"	Inverter	1
IC58		TC4515BP	"	Decoder	1
IC21		VC1032-01	"	Filter	1
IC22		VC1032-02	"	"	1
IC23		VC1032-03	"	"	1
IC7		VC1032-11	"	"	1
IC12, 17		VC1036-01	"	"	2
IC41		VC1038-02	"	Mixer Amp.	1
IC34		VC1039-01	"	CR Array	1
IC55		VC4059	"		1
IC33, 35		VC4060	"		2
IC36		VC4062-01	"	Sustain Control	1
IC43		VC4064-01	"	OSC.	1
IC11		VC4065-01	"		1
IC42		VC4061	"		1
Q19		2SK163(M,N)	F.E.T.		1
Q2		2SA684(R)	Transistor		1
Q13, 20, 22, 32, 38		2SA929(F)	"		5
Q1, 3		2SB943(P,Q)	"		2
Q		2SC1570NP(F)	"		29
Q7, 8		2SD1268(P,Q)	"		2
D55		MA381(S)	Vari. Cap.		1
D		1S1555	Diode		54
D1	⚠	DBA40C-K15	"		1
D8, 9		GZA3.3(Y)	Zener Diode		2
D12		GZA6.2(Y)	"		1
D2, 6, 13		GZA8.2(Y)	"		3
X1		CSA6.00MT	Cera. Lock		1
L2		SMV2110	OSC. Coil		1
L1	⚠	SMV2194-BS	Coil		1
RA21		EXB-P83472K	Resistor Array		1
RA15		EXB-P84223K	"		1
RA8, 9, 10		EXB-P88103K	"		3
RA14		EXB-P88223K	"		1
RA3,5,7,12,13,16,17,19,20		RMNZ3111	"		9
RA4, 6, 11, 18		RMNZ4111	Resistor Array		4
CA2		EXF-P4101MW	Capacitor Array		1
CA1		EXF-P8101MW	"		1
	⚠	QMC0263-004-BS	AC Socket		1

Symbol No.	⚠	Parts No.	Parts Name	Description	Q'ty
		QMS6312-018	HP Jack	for Headphone, Mic	2
		QMS6303-015	EXP. Jack	for Expression Pedal	1
		SMV2107-WHT	Pin Jack	for AUX	2
		SMV2107-RED	"		2
		SMV2191	DIN Jack	for MIDI	2
		SMV2193	"	for Guitar Strum	1
		SMV2204-FM	Cartridge Connector		1
CN7, 8	⚠	SS30810-003	PCB Header		2
CN9		SM3490-003	P.M. Pin		1
CN12		SS30644-010	Post Header		1
CN10		SS30662-003	L. Post Header		1
CN11		SS30662-005	"		1
		SS31053-016	Card Fit Connector		1
FJ1, 2		SS44769-233	Flex. Jumper		2
FJ6		SS44769-201	"		1
FJ4		SS43181-061	"		1
FJ5		SS43181-091	"		1
FJ3		SS43181-063	"		1
		E48965-002	Fuse Holder		4
F2	⚠	QMF51A2-R20-BS	Fuse		1
F1	⚠	QMF51A2-R40-BS	"		1
	⚠	QSS2325-103-BS	Voltage Selector		1
		SMV2082	Heat Sink	for IC4	1
		SMV2155	"	for Q3	1
		DPSP3010Z	Screw		2
		LPSP3008Z	"		1
		SM3660-002	IC Socket	for IC33, 35	2
		SSV0411	"	for IC54, 55	2
R58		QVP8A0B-024	V. Resistor	20 K (B)	1
R82, 125		QVP8A0B-025	"	200 K (B)	2
		SMV2189	"	for Mic	1
		SMV2216	"	for Pitch	1
		SMV2216	"		1
FR1, 57, 74		QRZ0052-100	F. Resistor		3
		QRD141J-	C. Resistor		271
C5		QEL71ER-688	E. Capacitor		1
C14, 15		QETB1AM-108	"		2
C6, 7		QETB1EM-477	"		2
C31		QETB0JM-108	"		1
C32		QET1CM-447	"		1
		QETC1HM-	E. Capacitor		39
		QETC1AM-107Z	"		16
		QETC1CM-107Z	"		1
		QET61HM-	"		11
		QEC61HM-	"		4
		QFN31HJ-	M. Capacitor		34
C3, 4		QCF32HP-103	C. Capacitor		2
		QCS31HJ-	"		27
		QCF31HP-473ZK	"		6
C1, 2	⚠	QCZ9019-103-BS	"		2

MKM P. C. Board Assembly

PARTS LIST

Symbol No.	⚠	Parts No.	Parts Name	Description	Q'ty
		SMK25	MKM-49 P.C.B. Ass'y		1
		SM1357	MKM-49 P.C.B.		1
SW1–49		SMV2164	Key Switch		49
D1–49		1S1555	Diode		49
CN1		SS31053-016	C.F. Connector		1
		SS31055-16152	Card Cord	Connect to TO P.C.B.	1

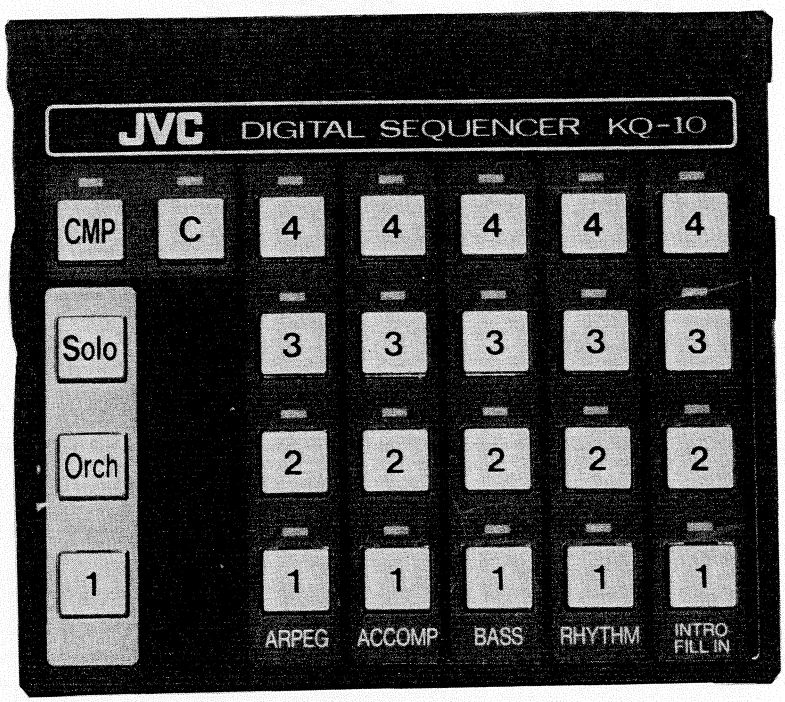
RT P. C. Board Assembly

PARTS LIST

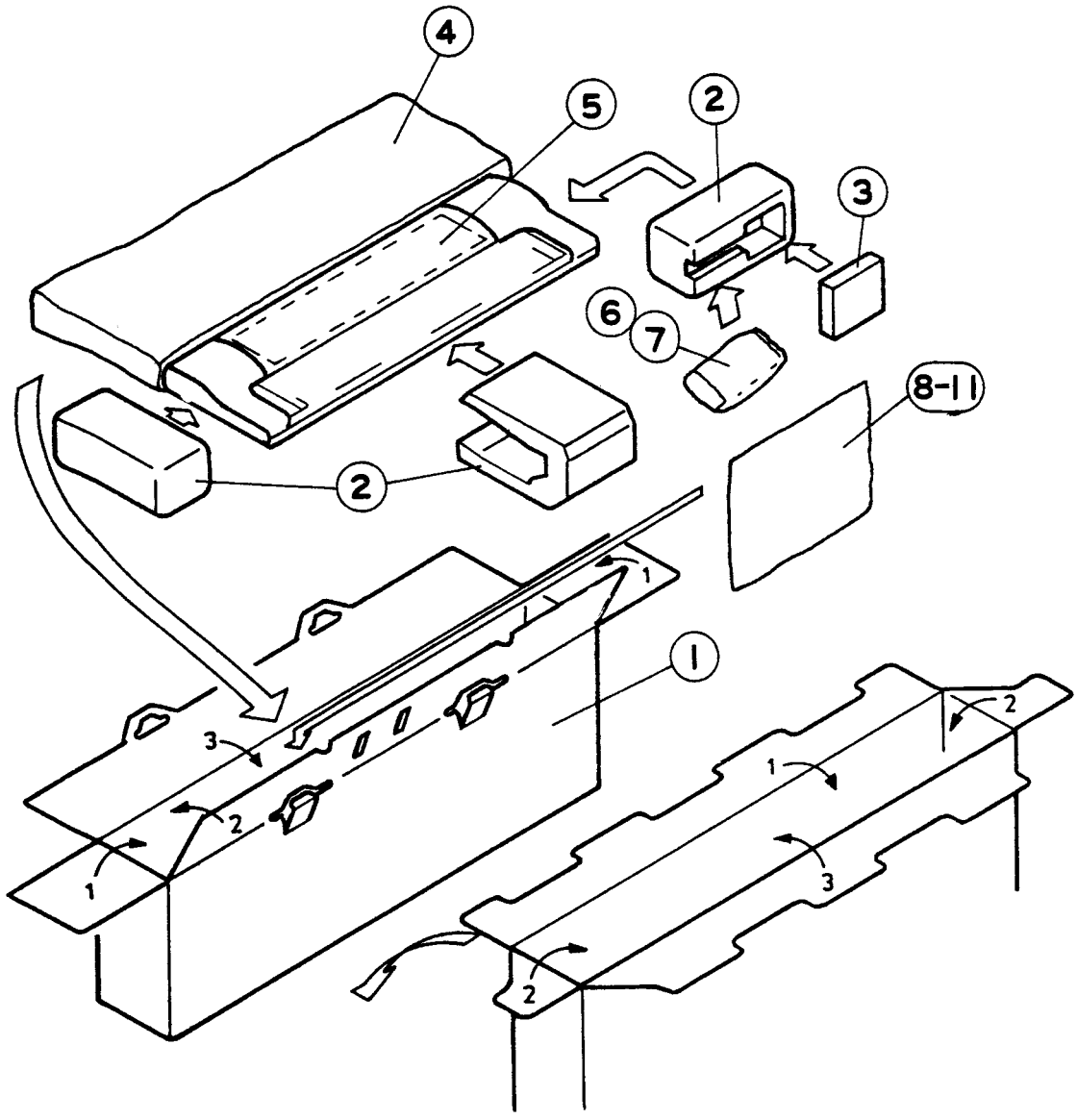
Symbol No.	⚠	Parts No.	Parts Name	Description	Q'ty
Q42		2SA937LN(R.S)	Transistor		1
Q41,43		2SC2021LN(R.S)	〃		2
Q41		RPM-20PB	P. Transistor		1
D68		SIM-20ST	LED		1
		SMV2215	Switch		1

Accessory

KQ-10 (Digital Sequencer)



Packing

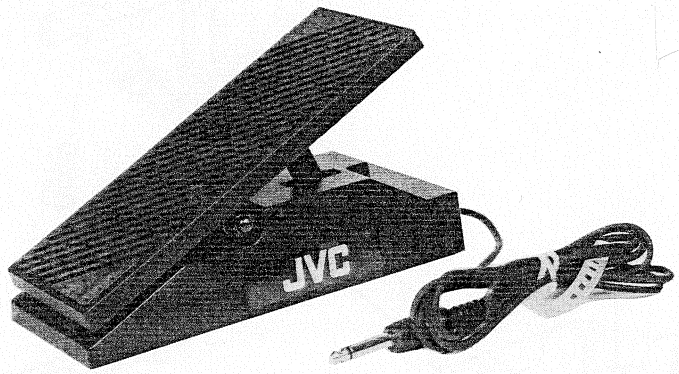


PARTS LIST

No.	⚠	Parts No.	Parts Name	Description	Q'ty
1		PK-KB600	Packing Case		1
2		NZ-KB600	Packing Pad		1
3		SMV2181-JVC	D. Sequencer	KQ-10	1
4		QPGA097-05007	Poly Cover		1
5		PKSM100-10	Sheet		1
6	⚠	QMP2550-200	Power Cord	for Model H	1
6	⚠	QMP9017-013-BS	"	for Model B	1
6	⚠	QMP3950-244	"	for Model N	1
7		QPGA012-03005	Poly Bag		1
8		SMA1095	Instruction Book		1
9		SMA1104	Resist. Chart		1
10		SMA1101	Song Book		1
11		QPGA025-03505	Poly Bag		1

Optional Accessories

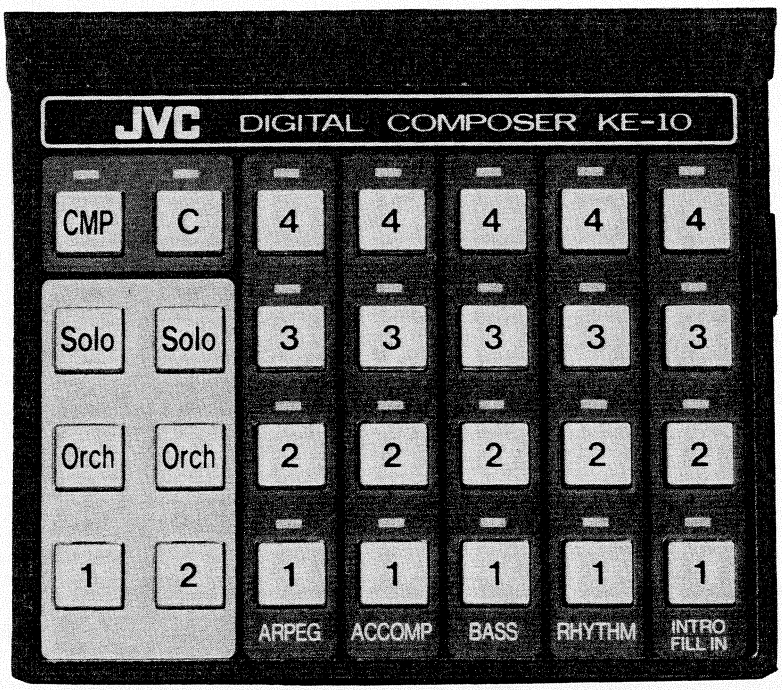
1. KX-20 (Expression Pedal)



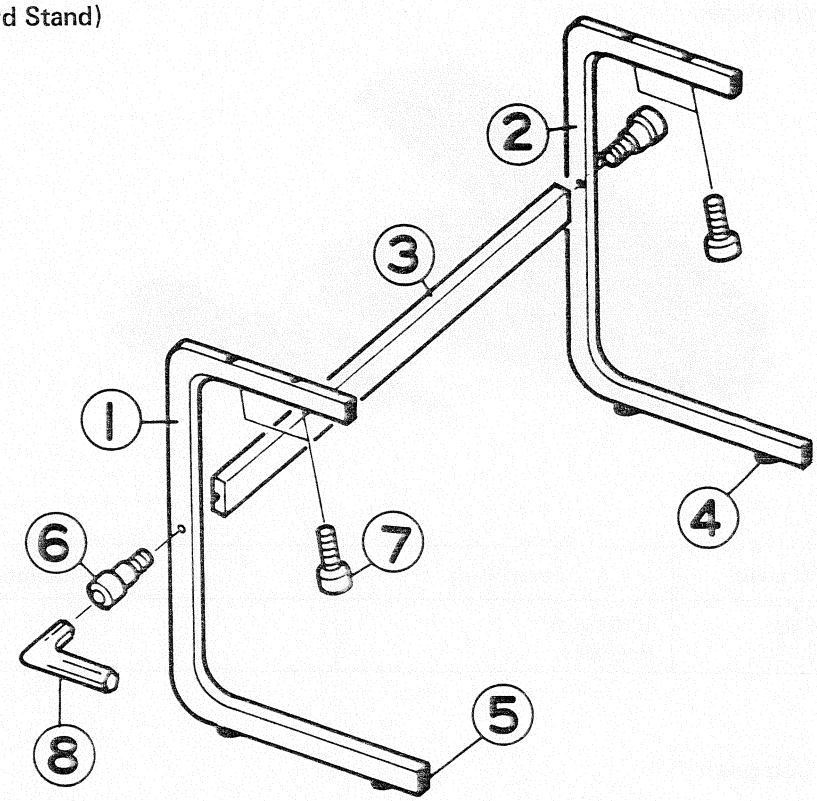
PARTS LIST

No.	⚠	Parts No.	Parts Name	Description	Q'ty
		SMV2084 SMV2124	V. Resistor Plug Wire		1 1

2. KE-10 (Digital Composer)



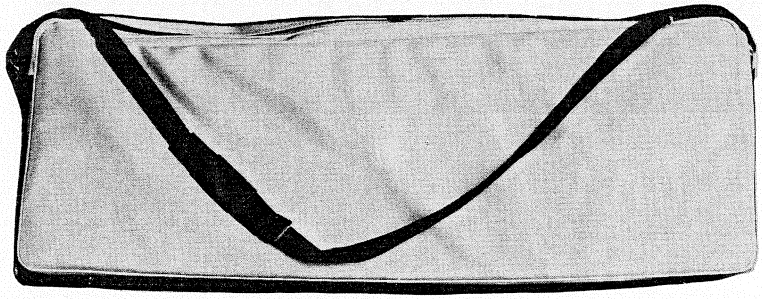
3. KS-10 (Keyboard Stand)



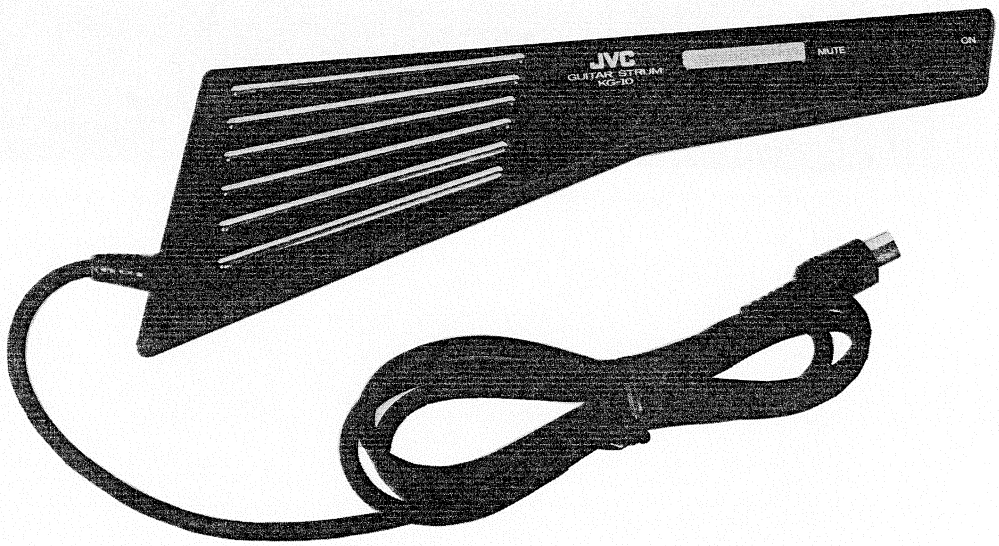
PARTS LIST

No.	⚠	Parts No.	Parts Name	Description	Q'ty
		SM2747	Stand Ass'y	KS-10	1
1		SM2747-002	Frame L		1
2		SM2747-003	Frame R		1
3		SM2747-005	Channel		1
4		SM2747-006	Foot		4
5		SM2747-007	Pipe Cap		4
6		SM2747-008	Set Screw		2
7		SM2747-009	Knob Screw		4
8		SM2747-012	Wrench		1
9		SMP2079-010	Packing Case		1

4. KC-10 (Carrying Case)



5. KG-10 (Guitar Strum Board)



PARTS LIST

No.	⚠	Parts No.	Parts Name	Description	Q'ty
		SMV2183-6	Plug Wire		1

JVC

Stereo keyboard

KB-600

OWNER'S MANUAL
BEDIENUNGSANLEITUNG
MANUEL DU PROPRIETAIRE
GEBRUIKSAANWIJZING

IMPORTANT (in the United Kingdom)
Mains Supply (AC 240 V~, 50 Hz only)

Do not make any connection to the Larger Terminal coded E or coloured Green. The wires in the mains lead are coloured in accordance with following code:

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured Black.
Brown wire to terminal coded L (Live) or coloured Red.
If in doubt — consult a qualified electrician.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
To prevent electric shock, do not remove screws, covers or cabinet.
No user-serviceable parts inside. Refer servicing to qualified service personnel.

NOTE
Disconnect the AC plug when not in use.

NOTE
The rating plate and safety cautions are on the bottom of the instrument.

Eftersom denna apparat använda det sekundär strömknappsystem, konsumeras en liten mängd ström (ungefär 1 W) även om POWER knappen står på ON. För att stänga av strömen helt och hållet, drag ut strömkontakten från AC mynningen.

Thank you for purchasing JVC's KB-600 Stereo Keyboard. To get full enjoyment of your KB-600, read this owner's manual before playing the keyboard. After reading, keep the manual handy for future reference.

PRECAUTIONS

- Use only the power cord provided.
- Disconnect the power cord immediately in the event of an electrical storm.
- In the event repair is required, see your local dealer or JVC-authorised service agency. Do not attempt any internal adjustments or repairs.
- Avoid storing the instrument
  - under the direct rays of the sun;
  - near a heater, stove, fireplace or other heat source;
  - in extremely dusty environments or places subject to high vibrations.
- To clean the KB-600, use a dry cloth or one moistened with water or a neutral detergent.

CONTENTS

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Play It First
— Preparation/Initial Registration — 2
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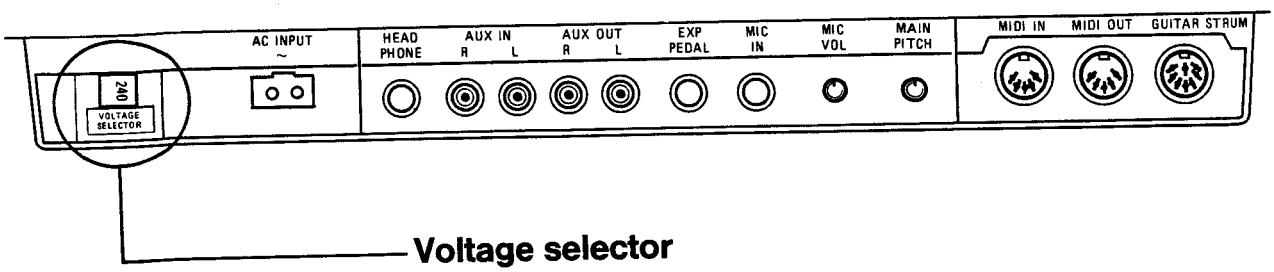
Full-PCM Stereo Rhythm 6
Fascinating Chord 7
Custom Memory 8
Digital Sequencer 9
Digital Composer (optional) 10
Compucorder 11
Rear Panel, Auxiliary Connections and Options for Expanding Your Music System 13
Specifications 15

PLAY IT FIRST
— PREPARATION/INITIAL REGISTRATION —



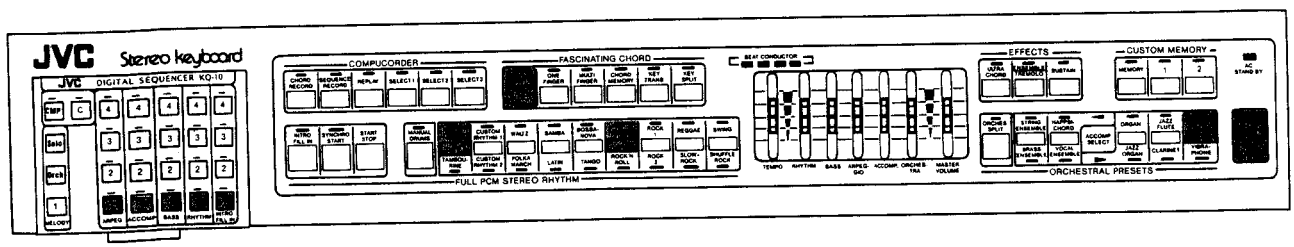
Voltage selector

The voltage selector is located on the rear of the instrument. Before switching on, check that the correct voltage (120 V, 220 V or 240 V) has been selected for your area.

- The AC STANDBY indicator (⑲ on page 4) is illuminated when the power cord is connected to an AC outlet.

Press the POWER switch (⑱ on page 4) "ON"

Your KB-600 will automatically be set to the initial registration shown below and is ready to play. The overall volume is controlled by the MASTER VOLUME slide control (⑫ on page 4).



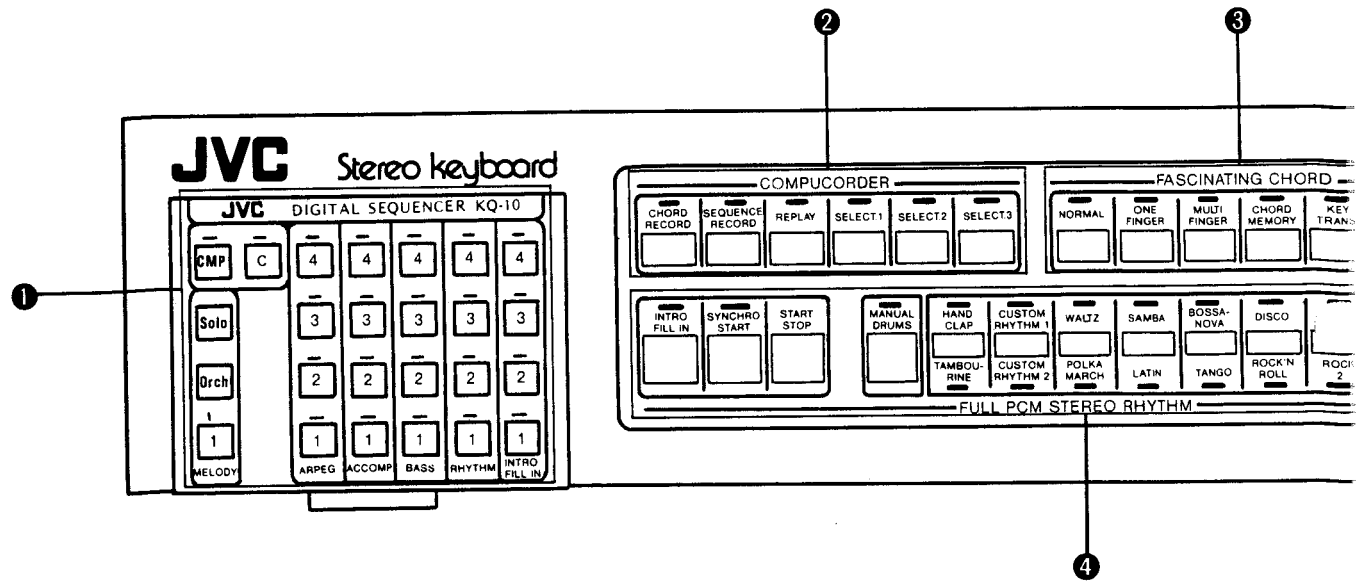
- The power is switched off by pressing the POWER switch again. All the other flat switches on the KB-600 function in the same way, alternating between on/off or above/below with each press.
- You can store presets, effects and automatic accompaniment different from the initial registration using the CUSTOM MEMORY switches. For details, see page 8.

CONTROL PANEL

❶ DIGITAL SEQUENCER (See pages 9 – 10)
The DIGITAL SEQUENCER pack provides:
– 4 variations of the RHYTHM pattern,
– 4 variations of the INTRO/FILL IN pattern,
– 4 variations of the rhythmic ACCOMPANIMENT pattern
– 4 variations of the BASS pattern,
– 4 variations of the ARPEGGIO pattern,
All of these variations are available for each of the 14 FULL PCM STEREO RHYTHMs.
– plus composable MELODY memory track.
The DIGITAL SEQUENCER can be removed and replaced with the optional KE-10 Digital Composer. For details, see page 10.

❷ COMPUCORDER (pp. 11 – 12)
Three tracks are provided for storing chords and sequences. The total memory capacity is 128 bars.

❸ FASCINATING CHORD (pp. 7 – 8)
Automatic accompaniment can be played in both one-finger and multi-finger modes. The accompaniment includes percussion provided by the FULL-PCM STEREO RHYTHM, bass, arpeggio and rhythm accompaniment (guitar, cutting guitar and one of the ORCHESTRAL PRESETS).



❹ FULL-PCM STEREO RHYTHM (p. 6)
These 14 rhythms incorporate 16 percussion sound sources, recorded live by the digital PCM method and reproduced through 6 channels with stereo distribution.

WALTZ	SAMBA	BOSSA NOVA	DISCO	ROCK 1	REGGAE	SWING
POLKA MARCH	LATIN	TANGO	ROCK'N ROLL	ROCK 2	SLOW ROCK	SHUFFLE ROCK

❺ BEAT CONDUCTOR (p. 6)
Four LEDs always indicate the beat of the rhythm by flashing in sequence, even when the rhythm is not playing.

❻ – ⓬ Slide controls

❻ TEMPO
Speed of the FULL-PCM STEREO RHYTHM. (p. 6)

❼ RHYTHM
Volume of the FULL-PCM STEREO RHYTHM. (p. 6)

❽ BASS
Volume of the bass of the FASCINATING CHORD. (pp. 7 – 8)

❾ ARPEGGIO
Volume of the arpeggio of the FASCINATING CHORD. (pp. 7 – 8)

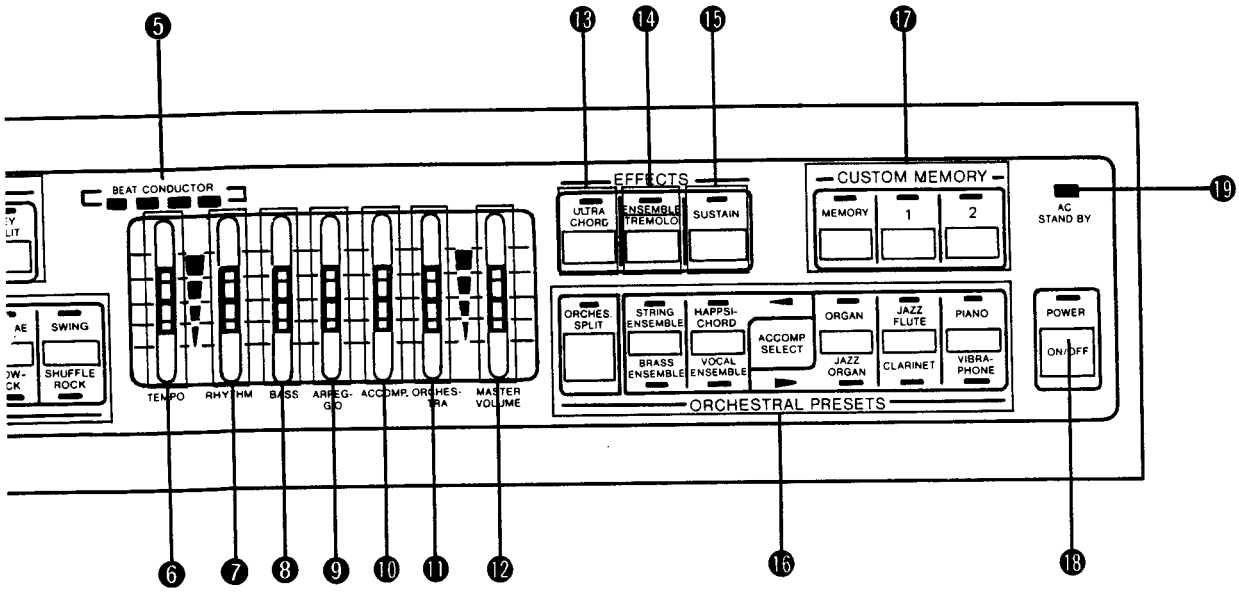
⓭ ULTRA CHORD
By pressing this switch during automatic accompaniment, harmony is added to right-hand melody according to the chord used in the accompaniment.

⓮ ENSEMBLE/TREMOLO
This switch adds the ensemble effect to the ORCHESTRAL PRESETS except for ORGAN and JAZZ ORGAN, and the tremolo effect to ORGAN and JAZZ ORGAN.

⓯ SUSTAIN
This switch adds the sustain effect to the ORCHESTRAL PRESETS after a key is released.

⓰ ORCHESTRAL PRESETS (p. 5)
These polyphonic voices can produce up to 8 notes at a time when the automatic accompaniment is not used, and up to 4 notes when it is used.

STRING ENSEMBLE	HARPSICHORD	ORGAN	JAZZ FLUTE	PIANO
BRASS ENSEMBLE	VOCAL ENSEMBLE	JAZZ ORGAN	CLARINET	VIBRAPHONE



⓫ ACCOMP
Volume of both the left-hand accompaniment and rhythm accompaniment of the FASCINATING CHORD. (pp. 7 – 8)

⓬ ORCHESTRA
Volume of the ORCHESTRAL PRESETS. (p. 5)

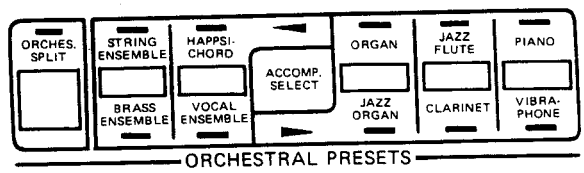
⓭ MASTER VOLUME
Overall volume of the KB-600.

⓱ CUSTOM MEMORY (p. 8)
Two registration settings composed by the user can be stored in memory and recalled by a single touch at any time.

⓲ POWER switch

⓳ AC STANDBY indicator
The LED is illuminated when the power cord is connected to an AC outlet, even when the POWER switch is off.

ORCHESTRAL PRESETS



ORCHESTRA SPLIT

The ORCHESTRAL PRESETS are divided into two groups: The left group (coloured grey) includes STRING ENSEMBLE, BRASS ENSEMBLE, HARPSICHORD and VOCAL ENSEMBLE. The right group (coloured blue) includes ORGAN, JAZZ ORGAN, JAZZ FLUTE, CLARINET, PIANO and VIBRAPHONE.

You can play two different ORCHESTRAL PRESETS, one for left-hand accompaniment and the other for right-hand melody, using the ORCHESTRA SPLIT.

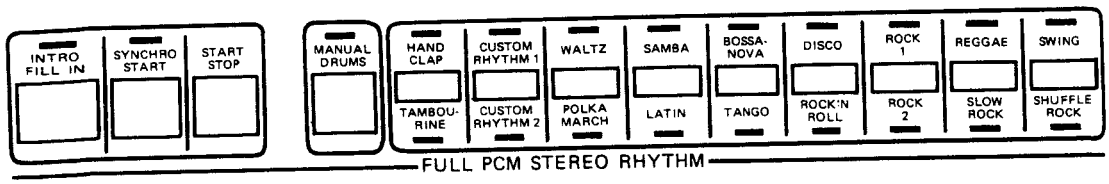
When a voice belonging to one group is used for accompaniment (or melody), the melody (or accompaniment) voice should be selected from the other group.

Procedure

1. Press the ORCHE SPLIT switch so that the LED lights.
2. When the LED above the ACCOMP SELECT switch is lit, the left group voices are assigned for accompaniment and right voices for melody. When the lower LED is lit, the right group voices are assigned for accompaniment and left voices for melody.
   Each press on the ACCOMP SELECT switch alternates the relationship.
3. Select preset voices for melody and accompaniment. The voices selected are shown by the LED indicators.
4. Each press on the ACCOMP SELECT switch reverses the melody and accompaniment voices.

- The ORCHESTRAL PRESETS assigned for accompaniment are also used for the rhythm accompaniment during automatic accompaniment. For detail, see pages 7 and 8.
- When the ORCHESTRA SPLIT is switched on, either STRING ENSEMBLE (when a preset voice for melody is selected from the right-group voices) or PIANO (when a preset voice for melody is selected from the left group) will automatically be selected for accompaniment voice.
- When the ORCHESTRA SPLIT is switched off, only the ORCHESTRAL PRESET selected for the melody stays activated.
- The ENSEMBLE/TREMOLO effect given to the melody voice is automatically given also to the accompaniment voices.
- When the STRING ENSEMBLE or VOCAL ENSEMBLE is selected for melody, the ENSEMBLE effect is added automatically.

FULL-PCM STEREO RHYTHM



START/STOP switch

After selecting one of the 14 rhythms, press the START/STOP switch to start the rhythm. The speed can be adjusted by the TEMPO slide control ❻ and the volume by the RHYTHM slide control ❼. The BEAT CONDUCTOR ❺ indicates the beat of the rhythm.

SYNCHRO START switch

When this switch is on, the rhythm starts when one of the accompaniment keys is pressed.

INTRO/FILL IN switch

A one-bar rhythm break is produced by pressing this switch as you play the keyboard. When this switch is pressed before starting the rhythm, the rhythm is introduced with a one-bar or two-bar break, according to the rhythm pattern.

HAND CLAP/TAMBOURINE switch

Each press of this switch adds hand clap or tambourine alternately to the rhythm.

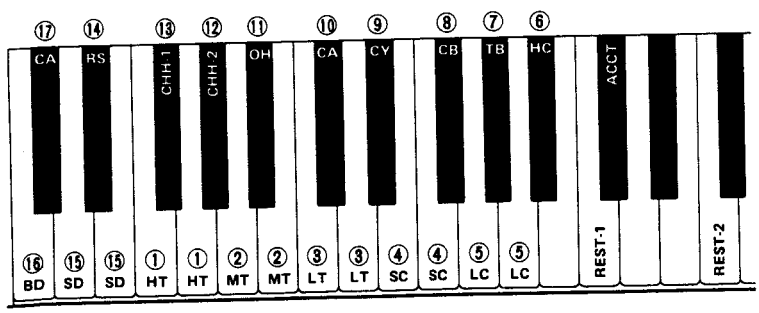
CUSTOM RHYTHM 1/2 switches

When the optional KE-10 Digital Composer is installed in your KB-600, you can store your original rhythm/fill-in/bass/accomp/arpeggio patterns composed using the KE-10 under these switches. For more information, see page 10.

MANUAL DRUMS

This function allows rhythm to be played manually. When the MANUAL DRUMS switch is on, the 23 keys of the lowest 2 octaves produce percussion instead of preset voices.

The 16 percussion sources are grouped into 6 channels; one instrument from each channel can be played separately or together.



Channel 1
- ★ ① **HT:** High tom-tom
- ★ ② **MT:** Middle tom-tom
- ★ ③ **LT:** Low tom-tom
- ★ ④ **SC:** Small conga
- ⑤ **LC:** Large conga

Channel 2
- ⑥ **HC:** Hand clap
- ⑦ **TB:** Tambourine

Channel 3
- ⑧ **CB:** Cowbell
- ★ ⑨ **CY:** Cymbal

Channel 4
- ⑩ **CA:** Cabasa
- ⑪ **OH:** Open high-hat
- ★ ⑫ **CHH-2:** Closed high-hat (2)
- ★ ⑬ **CHH-1:** Closed high-hat (1)

Channel 5
- ⑭ **RS:** Rim shot
- ★ ⑮ **SD:** Snare drum

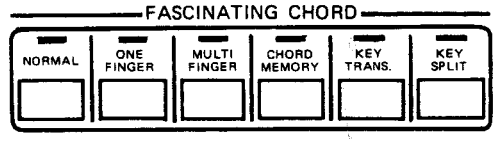
Channel 6
- ★ ⑯ **BD:** Bass drum
- ⑰ **CA:** Cabasa

Other effect keys

Accent key ($C\#_3$): Press to give accent to a beat for instruments with a star (★).

Rest keys (C_3, F_3): Press to give a rest for a beat.

FASCINATING CHORD

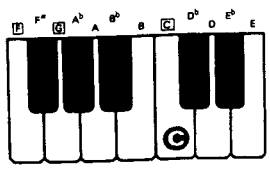


NORMAL switch

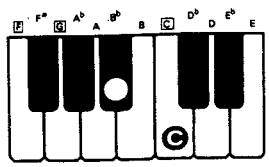
Press this switch when the automatic accompaniment is not necessary.

ONE FINGER switch

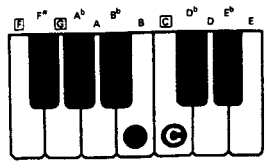
Major chords can be produced by pressing a single key corresponding to the root of the chord. Seventh, minor and minor seventh chords can also be produced with two or three fingers of the left hand.



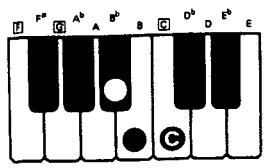
MAJOR CHORDS (example: C):
Press one of the C keys in the accompaniment (left) section.



MINOR CHORDS (example: Cm):
Press a C key together with any black key to the left of it.



SEVENTHS (example: C7):
Press a C key together with any white key to the left of it.



MINOR SEVENTHS (example: Cm7):
Press a C key together with any black key and any white key to the left (all three together).

MULTI FINGER switch

When this switch is on, chords formed by the left hand can be used to generate the accompaniment. This feature is especially convenient when playing/storing a tune with complex chords since the KB-600's computer can distinguish and play nine chords in any key. (In the key of C, they are C, Cm, C7, Cm7, Caug, Csus4, Cmb5, Cm7b5 and CM7.)

CHORD MEMORY switch

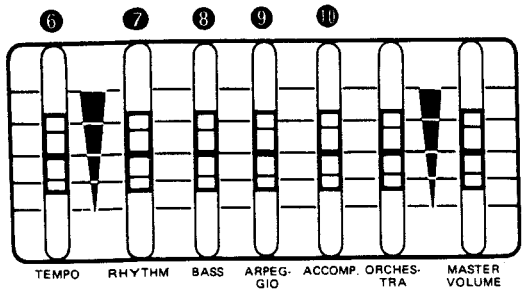
With this switch on, the accompaniment continues after the left hand is released. The chord plays until another key or the START/STOP switch is pressed.

KEY TRANSPOSE switch

Any key can be transposed to C by the KEY TRANSPOSE function. Press the KEY TRANS switch together with the note you want to transpose to C. To go back to the original key, press the KEY TRANS switch alone.

KEY SPLIT switch

In the FASCINATING CHORD automatic accompaniment, the 49-key manual of the KB-600 is divided into two parts; the accompaniment section on the left and melody section on the right. Although the normal dividing point is the $F\#_2$ key, which is the highest key of the accompaniment section, the position can be changed with the KEY SPLIT switch.
Press the KEY SPLIT switch together with the key you want to designate as the highest key of the accompaniment section. The KEY SPLIT is cancelled by pressing the KEY SPLIT switch alone.



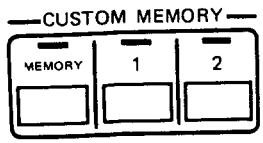
The FASCINATING CHORD accompaniment consists of these four parts.

1. Rhythm percussions: They depend on the setting of the FULL-PCM STEREO RHYTHM controls, with the tempo adjusted by the TEMPO slide control ❻ and volume by the RHYTHM slide control ❼.
2. Bass: The volume is adjusted by the BASS slide control ❽
3. Arpeggio: The volume is adjusted by the ARPEGGIO slide control ❾.
4. Rhythm accompaniment: The voice can be guitar, cutting guitar or one of ORCHESTRAL PRESETS (using the ORCHESTRA SPLIT). The volume is adjusted by the ACCOMP slide control ❿. This part can be played either automatically or manually with the optional Guitar Strumboard. (See page 14.)

Patterns can be varied and sequenced using the DIGITAL SEQUENCER. For details, see pages 9 and 10.

- The KEY TRANSPOSE and KEY SPLIT functions can be activated even when the automatic accompaniment is not used ("NORMAL"). The KEY SPLIT and ORCHESTRA SPLIT functions can be activated together.

CUSTOM MEMORY



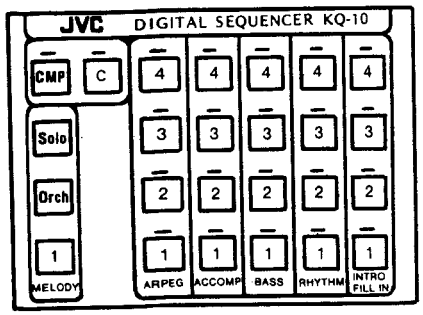
Settings of the ORCHESTRAL PRESETS (including ORCHESTRAL SPLIT), EFFECTS and FASCINATING CHORD (except KEY TRANSPOSE), different from the initial registration, can be stored in memory. Two memories are provided for the purpose.

Procedure (To store a setting in memory "1")

(1) After setting the ORCHESTRAL PRESETS, EFFECTS and FASCINATING CHORD as desired, press the "1" switch while pressing the MEMORY switch.
(2) The stored setting can then be recalled by just touching the "1" switch. (LEDs light.)
(3) To go back to the previous registration setting, press the "1" switch again. (LEDs go off.)
(4) The recalled registration can be modified manually without affecting the memory itself.

- Procedure for memory "2" is same as memory "1".
- The stored memories are not erased even after the KB-600's power is switched off.

DIGITAL SEQUENCER



The DIGITAL SEQUENCER (KQ-10 provided) has a preset memory of four pattern variations (1 to 4) for the RHYTHM, INTRO/FILL IN, BASS, ACCOMPANIMENT and ARPEGGIO, for each of the 14 rhythms.
The variations can be combined in sequence before starting a tune.

- The Solo switch cannot be used with the KB-600.

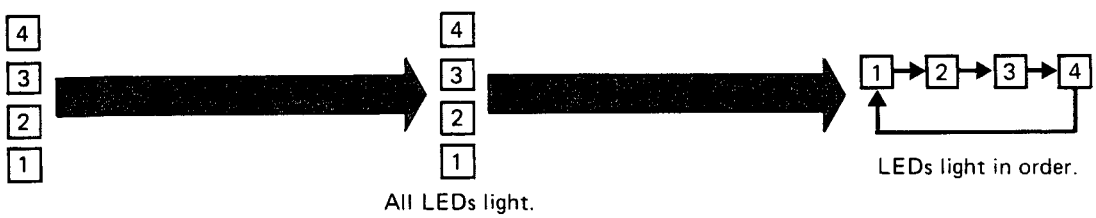
Procedure

All variations are playable in one-bar or two-bar units. Changes made in the middle of a bar are effective instanteneously.

(1) **Varying a pattern**
After starting the tune, press any variation switches (rhythm variation switches 1 – 4 for example) and listen to the changes.

(2) **Muting a part**
Pressing the lighted switch mutes the part. To resume it, press any of the switches 1 – 4.

(3) **Programming/playing variations in an automatic sequence**
Automatic variations can be programmed in one-bar units.
To play all rhythm patterns in order from variation 1 to 4, press all switches (1 – 4) together.
The four variations will play in sequence, in 4-bar cycles.



To alternate two patterns, press two switches together.
The two variations will play in 2-bar cycles.

* All the other switches in the DIGITAL SEQUENCER and COMPUCORDER function in the same way: when more than one switch is pressed, they will be played/recorded in cycles, in the numbered order.

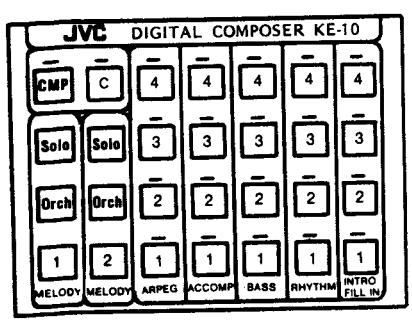
The DIGITAL SEQUENCER also has a memory track for storing monophonic melodies composed using the KB-600. The capacity of the memory is 300 notes in total and the minimum unit for recording is a demisemiquaver (thirty-second-note) triplet ( ).

Basic composing/storing procedure

(1) While pressing the "CMP" switch, press MELODY switch "1" – both LEDs go on and off. Then input the melody after pressing the START/STOP switch of the FULL PCM STEREO RHYTHM. The input operation is easier if you play the melody with accompaniment previously recorded in the COMPUCORDER. (See Note 1)
(2) To stop storing, press the START/STOP switch. (Note 2)
(3) To replay the melody, press switch "1", then press the START/STOP switch. The melody will repeat until it is stopped. You can play a second melody during the replay. (Note 3)

Notes
1. If the track capacity is filled before the end of a melody, rhythm stops automatically and the LEDs go off.
2. If no switch is pressed after the melody is finished, recording continues until the end of the track and stops automatically.
3. The stored melody can also be recorded and replayed using the COMPUCORDER. For details, see pages 11 and 12.

DIGITAL COMPOSER (optional)



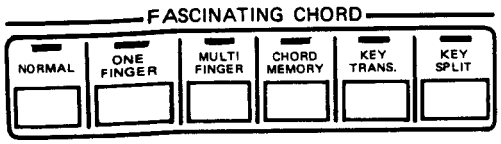
In addition to the functions of the DIGITAL SEQUENCER, the optional KE-10 Digital Composer enables.
1. Revising/creating the rhythm/fill-in/rhythm accompaniment/bass/arpeggio patterns of provided rhythms.
2. Creating two entirely new rhythms and the intro/fill-in, rhythm accompaniment, bass and arpeggio patterns to be used with them, and storing them under the CUSTOM RHYTHM 1 and CUSTOM RHYTHM 2 switches of the FULL-PCM STEREO RHYTHM.

With these functions, automatic rhythm and accompaniment possibilities are unlimited. Two melody memory tracks are provided. The memory capacity is 500 notes per track, 1000 notes in total, which is more than three times that of the DIGITAL SEQUENCER. For further details, see your local JVC dealer or read the instructions provided with the KE-10 Digital Composer.

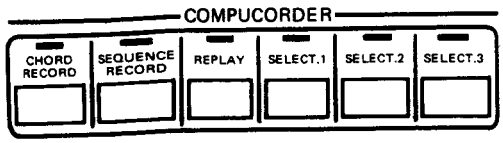
COMPUCORDER

The COMPUCORDER provides three memory tracks for storing chord progressions and rhythm/fill-in/rhythm accompaniment/bass/arpeggio sequences. By playing them back with a melody stored using the DIGITAL SEQUENCER or the optional KE-10 Digital Composer, a whole tune can be played automatically.
The memory capacities of the tracks are: (1) 48 bars, (2) 48 bars, (3) 32 bars; 128 bars in total.

Recording chord progression

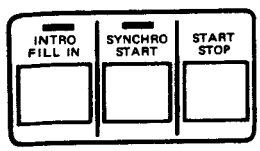


(1) Activate the FASCINATING CHORD by pressing the ONE FINGER or MULTI FINGER switch, without starting the rhythm. (See Note 1 below)



(2) Press the CHORD RECORD switch and the "SELECT 1" switch. (Note 2)

(3) Press the START/STOP switch to start the rhythm. Change chords according to the music. You can change chords at each beat. (Note 3)

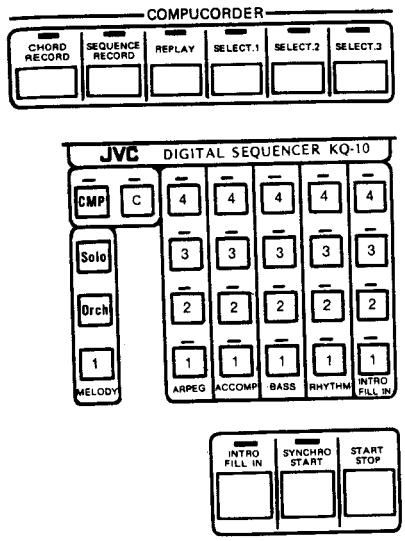


(4) When the tune is over, stop the rhythm. If you don't stop it, blank will be recorded until the end of the track. (Note 4)

Notes

1. Since tempo is variable during replay, it is easier to make recordings at slower tempo than the real tempo.
2. You can also record on tracks "2" and "3". To record tunes with more than 48 bars, press two or three switches at the same time; when the capacity of a track is full, the KB-600 will automatically switch to the next track in order.
3. With tunes that start with drum intro, start recording from just after the introduction.
4. If the memory capacity of the selected track(s) is filled, the LEDs in the CHORD REC and track SELECT switches go off.

Recording sequences (ex: rhythm and fill-in sequences)



(1) Press the COMPUCORDER's SEQUENCE RECORD and "SELECT 1" switches so that their LEDs light. Then press the DIGITAL SEQUENCER's RHYTHM "1" and FILL IN "2" switches; LEDs of these two switches go on and off indicating recording standby. (Note 1)

(2) Start recording by pressing the START/STOP switch.

(3) Change patterns as desired.
(To replace a bar with a fill-in, press the INTRO/FILL IN switch.) (Note 2)

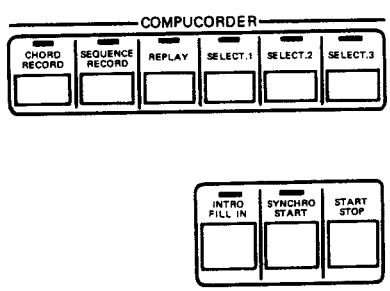
(4) To stop recording, press the START/STOP switch.

(5) To record sequences of BASS, ACCOMPANIMENT, ARPEGGIO and MELODY, repeat the same procedure for each part.

Notes

1. The sequences of RHYTHM, BASS, ACCOMPANIMENT, ARPEGGIO and MELODY can be recorded individually; FILL IN must always be recorded along with the RHYTHM.
2. If more than one sequence switch is pressed in procedure (1) (e.g. RHYTHM "1" and "2" switches together instead of RHYTHM "1" alone), the automatic sequence will be recorded.
3. The sequences which have previously been recorded are replayed as you record new sequences. Recording therefore will be much easier if you record all parts with variations "1" to clear old data before starting to record new sequences.
4. Sequence recording is possible for the number of bars that have been recorded in the CHORD RECORD.

Replaying chords, sequences and melody



(1) Press the REPLAY switch and "SELECT 1" (or "2" or "3") switch. (Note 1)

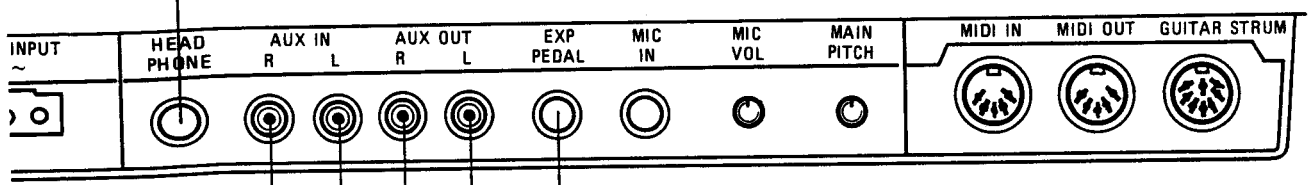
(2) Press the FASCINATING CHORD's START/STOP or SYNCHRO START switch. After starting the replay, ULTRA CHORD can be switched on or a supporting melody can be played to fill out the melody. (Note 2)

(3) To stop replay, press the START/STOP switch. To deactivate the COMPUCORDER, press the REPLAY switch and the LEDs go off.

Notes

1. If you press two switches (or three) at the same time, the tracks will be replayed in order, repeatedly.
2. The rhythm used in replay can be different from that used in recording (except Waltz which should always be recorded and replayed in Waltz).
3. The COMPUCORDER repeats the number of bars recorded in the CHORD RECORD. When chords have been recorded for 40 bars and other sequences for 48 bars, only 40 bars of chords and sequences are replayed repeatedly.

REAR PANEL, AUXILIARY CONNECTIONS AND OPTIONS FOR EXPANDING YOUR MUSIC SYSTEM



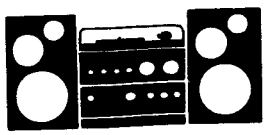
HEADPHONE jack

For private playing/listening, use the HP-717/ HP-M7 Headphones.

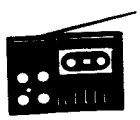
EXP PEDAL connector

By using the KX-20 Expression pedal, the master volume can be controlled by foot.

AUX IN/AUX OUT terminals



To connect a stereo system or tape deck, use the CN-160 Connection cord (stereo phono plugs – stereo phono plugs).

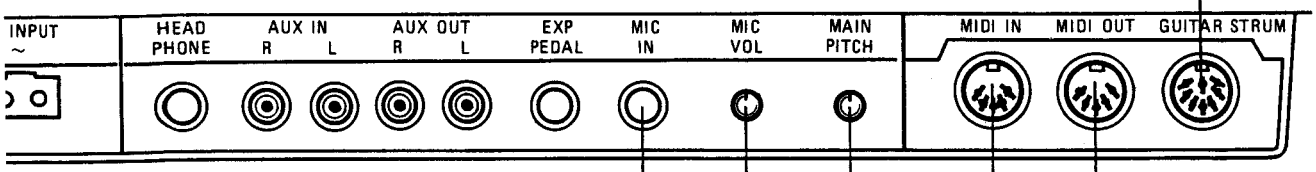


To connect a monaural radio cassette recorder, etc., use the CN-132 Connection cord (stereo phono plugs – mono miniplug).

To connect a Victron spinet organ, use the CN-132 together with the AP-100 Plug Adapter (mono miniplug – mono standard phone plug). Connect to the AUX IN jack (with Victron G series) or EXP IN jack (Victron M series).

GUITAR STRUMBOARD connector

The optional KG-10 Guitar strumboard lets you trigger the timing of accompaniment chords of the KB-600, like a rhythm guitar or harp arpeggio. This "6-string" instrument uses the KB-600's accompaniment guitar (cutting guitar) or ORCHESTRAL PRESETS as the sound source, and is ideal for ensemble play with someone who doesn't play the keyboard.



MAIN PITCH control

The overall pitch of the KB-600 can be adjusted.

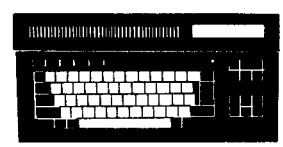
MIC IN jack/MIC VOL control

To sing through the KB-600's speakers, connect a monaural microphone such as the MD-260 and adjust the input volume with the MIC VOL control.
When the HP-V1 Stereo headphones/microphone headset is used, you can sing along while monitoring the instrumental backup.

To connect an electric guitar, etc., connect its cable to this jack.

MIDI(Musical Instrument Digital Interface) IN/OUT terminals

To play more than one MIDI-equipped instrument in synchronization, connect them using an optional MIDI cable.



To play music from a personal computer, connect an optional MIDI interface unit between the MIDI terminals of the KB-600 and the computer. This operation is possible with MIDI-equipped computers.
For details of MIDI operation, see also the instructions provided with the instrument or equipment to be connected.

SPECIFICATIONS

Number of keys	49
Orchestral Presets	1st orchestra: Organ, Jazz Organ, Jazz Flute, Clarinet, Piano, Vibraphone 2nd orchestra: String Ensemble, Brass Ensemble, Harpsichord, Vocal Ensemble Orchestra Split On/Off Accomp select
Effects	Sustain, Ultra Chord, Stereo (Chorus)/Ensemble (Tremolo)
Full PCM Stereo Rhythm	14 basic rhythms x 4 vari. = 56: Waltz, Polka March, Samba, Latin, Bossanova, Tango, Disco, Rock'n Roll, Rock 1, Rock 2, Reggae, Slow rock, Swing, Shuffle rock. Hand Clap/Tambourine, Manual Drums, (Custom rhythms 1/2 for KE10), Start/Stop, Synchro Start, Intro/Fill In, Beat Conductor (4 lamps)
Fascinating Chord	Normal, One Finger, Multi-finger Chord Memory, Key Transpose, Key Split (free) Accompaniment voices: Guitar/ Cutting guitar + Orchestral Presets
Digital Sequencer	Intro/Fill In (4 vari/rhythm) Rhythm (4 vari/rhythm) Bass (4 vari/rhythm) Rhythm Accompaniment (4 vari/rhythm) Arpeggio (4 vari) Melody compose (300 notes) Compose, Clear, Solo, Orchestra
Compucorder	Selector 1 (48 bars) Selector 2 (48 bars) Selector 3 (32 bars) Chord Record, Sequence Record (Fill In/Rhythm/Bass/Accomp/ Arpeggio/Melody), Replay
Custom setting memory	Memory 1/2 (Orchestral Presets/Orchestra Split) (Effects Sustain, Ensemble/Tremolo, Ultra Chord) (Key Split, Chord Memory, Normal/ One Finger/Multi Finger)
Initial setting registration	Melody: Piano, Rhythm: Disco, Hand Clap ON, Fascinating Chord: Normal Intro/Fill In: Vari 1 Rhythm: Vari 1 Bass: Vari 1 Accomp: Vari 1 Arpeggio: Vari 1
Controls	Master Volume, Orchestra Volume, Accomp Volume, Arpeggio Volume, Bass Volume, Rhythm Volume, Tempo
Ext. Terminals	AC In, Voltage selector, AUX Out R/L, AUX In R/L, Exp Pedal, Headphones, MIC In, Mic Volume, Pitch, MIDI In, MIDI Out, Guitar Strumboard
Power supply	AC 120/220/240 V switchable, 50/60 Hz.
Power output	2.5 W x 2
Speakers	12 cm x 2
Weight	6.8 kg
Dimensions	860 (W) x 93 (H) x 291 (D) mm
Power consumption	34 W
Provided accessories	AC cord, owner's manual
Optional accessories	KC-10 Soft Carrying Case KS-10 Keyboard Stand KX-20 Expression pedal HP-V1 Stereo Headphones/Microphone Headset KG-10 Guitar Strumboard KE-10 Digital Composer

Design and specifications subject to change without notice.